THE

JOURNAL OF GAS LIGHTING,

WATER SUPPLY, & SANITARY IMPROVEMENT.

VOL. VI. Nº 115—9th YEAR.] LONDON, MARCH 17, 1857. [Subscription per Ann. 15s. in Advance 18s. Credit. Price 8d. Unstamped.

FIRE-CLAY Retorts and Fire Goods.

The Advertiser has brought his Fire-Clay Retorts to great perfection, both as to quality and finish. Many have stood three and four years.

Every description of Fire Goods in any quantity always on hand. The Fire Clay is the very best in the North of England. Stock never less than 10,000 tons weathering.

Orders promptly executed.

Apply, G. H. RAMSAY, of Derwenthaugh Fire-Brick Works, near NEWCASTLE-ON-TYNE.

Aug. 22, 1856.

TO IRONFONNDERS AND OTHERS.

THE Directors of the Hastings and ST. LEONARD'S GAS COMPANY are prepared to receive TENDERS for the Supply and Delivery of 505 Cast-Iron SOCKET PIPES, 9 inches internal diameter, and 9 feet long, exclusive of the Socket. Each Pipe must be proved with a pressure of a column of water 250 feet high, and be struck smart blows with a 4-lb. hammer while under that pressure; and every Pipe must be perfectly cylindrical, both inside and outside, and the metal of an equal thickness all round. The weight must be marked distinctly in white paint upon each pipe, and none will be received the weight of which shall be less than 4 cwt. 7 lbs.

Six 9-inch BRANCHES, with 6-inch Outlets, are also required.

The whole must be delivered at the Contractor's expense, in good condition, upon the Priory Stade, or at the Railway Station in Hastings, on or before the 9th day of May next, under a penalty, in case of default, of £1 per day for each and every day which may intervene between the said 9th of May next and the day when the whole of the Pipes and Branches are delivered, as above mentioned.

Payment to be made by bill at three months' date from the completion of the deliveries.

The Tenders must be accompanied by a full-sized section of the Sockets of the Pipes, and state the interior diameter of the same. The prices to be quoted at per pipe for the Straight Pipes, and per ton for the Branch Pipes.

Tenders, sealed and endorsed "Tender for Mains," must be delivered at the Office of W. B. YOUNG, Esq., the Clerk to the Gas Company in HASTINGS, on or before the 20th inst.

The Directors do not bind themselves to accept the lowest or any Tender.

Hastings, March 10, 1857.

TO be Sold, at the Works of the CRYSTAL PALACE DISTRICT GAS COMPANY, for Cash on Delivery, 14 Yards of 12-inch Round Cast-iron HYDRAULIC MAIN, with 4-inch Dips and H-Pipes attached, ready for use.

Also, a quantity of 4-inch H-PIPES and SADDLE-PIPES, and eight small D-MOUTHPIECES, with Doors.

Will be put into Trucks on the London, Brighton, and South Coast Railway, at £5 per ton.

For further particulars, apply to Mr. MAGNUS OHREN, Secretary and Manager to the Company.

Offices, Bell Green, Sydenham.

COWEN'S PATENT FIRE-CLAY RETORTS.

JOS. COWEN and CO.,

BLAYDON BURN, NEAR NEWCASTLE-ON-TYNE.

Were the only parties to whom a PRIZE MEDAL was awarded at the GREAT EXHIBITION of 1851, for "GAS RETORTS and OTHER OBJECTS in FIRE CLAY."

J. C. and Co. have been for many years the most extensive Manufacturers of Fire Clay Retorts in the United Kingdom; and orders for Fire Clay Retorts of all shapes and dimensions, Fire Bricks, and every other article in Fire Clay, are promptly executed at their works as above.

COWEN'S GARESFIELD COAL AND COKE.

Coal and Coke Office,

QUAY SIDE, NEWCASTLE-ON-TYNE.

FIRST PRIZE IN THE PARIS EXHIBITION.

JOHN RUSSELL AND CO.,

THE OLD TUBE WORKS,

CHURCH HILL, WEDNESBURY,

STAFFORDSHIRE,

and 69, UPPER THAMES STREET, LONDON,

Original Manufacturers of Wrought-Iron Gas Tubes, and Holders of the present Patents; Inventors and First Makers of LAP-WELDED FLUES for Steam Boilers.

J. R. and Co. make all kinds of Tubes and Fittings for Gas, Steam, and Water, and the largest Orders may be executed in a few days.

The eminent Engineer, Mr. Perkins, confines himself altogether to the use of John Russell and Co.'s Tubes in his High-Pressure Steam Patents.

Gun Metal, and all other kinds of Cocks, Stocks, Dies, and Taps, Galvanised Tubes, &c.

N.B. All Goods thoroughly Tested before sent out, and Warranted.

WILLIAM STEPHENSON & SON,

THROCKLEY,

NEWCASTLE-ON-TYNE,

MANUFACTURERS OF EVERY DESCRIPTION OF

FIRE BRICKS, CLAY RETORTS, LUMPS, TILES,

&c. &c.

LONDON OFFICES:

76, KING WILLIAM STREET, CITY.

BLAYDON BURN AND LOW BENWELL FIRE-CLAY RETORT AND FIRE-BRICK WORKS, NEAR NEWCASTLE-ON-TYNE.

WILLIAM COCHRAN CARR,

begs most respectfully to thank the Metropolitan, Provincial, and Continental Gas Companies for their patronage for several years past, and to intimate that he has rebuilt and enlarged his extensive premises for the Manufacture of CLAY RETORTS; and that he is now prepared to execute the largest orders with punctuality and despatch. Orders for FIRE-CLAY RETORTS, of all shapes and sizes, FIRE-BRICKS, and all other Articles in Fire-Clay, executed on the shortest notice and on the most reasonable terms.

London Agents:

JAMES LAWRIE & CO.,

63, OLD BROAD STREET, CITY, LONDON.

CAST-IRON TANK AND GASHOLDERS FOR SALE,

AS they now stand, at the Hastings' GAS-WORKS. The Tank is 36 feet 4 inches diameter, and its Gasholder 35 feet 4 inches; both 18 feet deep, with 6 Guides, 2 6-inch Single Hydraulic Valves, 2 6-inch Double ones, and 1 6-inch Regulating Valve, with Connections complete. The whole were made and erected in 1843, by Messrs. Losh, Wilson, and Bell, of Newcastle-upon-Tyne, and are in excellent condition.

Also, a GASHOLDER, 40 feet diameter and 14 feet deep, with 6 Guide Columns and 5-inch Connections, all in first-rate condition.

Proposals to be addressed to Mr. A. H. WOOD, Gas-Office, HASTINGS.

DINAS FIRE BRICKS, RETORTS, AND CEMENTS.

YOUNG & ALLEN,

MANUFACTURERS OF DINAS FIRE BRICKS AND RETORTS,

NEATH, GLAMORGANSHIRE,

Beg to draw the attention of the Engineers and Managers of Gas-works to the superior quality of their goods, and more especially to their BRICK RETORTS, which, in addition to the almost infusible nature of the Fire-Clay employed, have the great advantage, from its large excess of Silica, of EXPANDING BY THE APPLICATION OF HEAT, and consequently becoming sounder and less liable to leak by use. Their cost is less than that of the ordinary Clay Retorts.

Young and Allen's DINAS FIRE-BRICKS and CEMENT have been long used for the linings of furnaces exposed to high temperatures, and are well known in the London and other Gas-works. They can be forwarded by rail to all parts of the United Kingdom, and shipped by sea to all parts of the world.

Prices on application as above.

MR. WILLIAM RICHARDSON,

CONSULTING ENGINEER,

DUDLEY.

JAMES RUSSELL AND SONS,

WEDNESBURY, STAFFORDSHIRE, and 81, UPPER GROUND STREET, BLACKFRIARS, LONDON,

PATENTEES, INVENTORS, AND FIRST MAKERS OF

WROUGHT-IRON GAS TUBING,

commencing from the *earliest* introduction of Gas Lighting into this country.

Manufacturers of every size and description of Wrought-iron Tubes and Fittings, from one-eighth up to seven-inch internal diameter, for Gas, Steam, or Water.

PATENTEES AND MANUFACTURERS OF THE

LAP-WELDED FLUES,

for Marine, Locomotive, and Stationary Boilers.

Inventors and Manufacturers of

IMPROVED STEAM AND GAS COCKS,

in Iron or Gun Metal, from three-eighths to six-inch bore. Manufacturers of every description of hand-screwing

STOCKS, DIES, AND TAPS,

for Gasfitters and Engineering purposes.

Manufacturers of Coils, for hot water and other purposes; Casing of all sizes, with flush joints, for Well-sinkers; Blasting Tubes; Buffer Tubes for Railway Carriages; Tubes for Roller Beams; Spindles, Shafts, Pendulums, Hydraulic Presses, Core Bars, Steam Gauges, &c. &c.

JAMES RUSSELL and SONS beg to call the attention of Engineers, Builders, Water Companies, and others, to their

PATENT ENAMELLED TUBES,

which preserve water or other liquids conveyed by them in a perfectly limpid condition; whilst the Enamel itself is as pure as the finest Porcelain, possessing the rare recommendation of being entirely free from any noxious ingredient in its composition.

Lists, Estimates, &c. &c., forwarded on application; orders, from 10 to 100,000 feet of gas tube, executed at twelve hours' notice if required, and quality may be safely relied upon, as all goods are most carefully tested before leaving the Works.

JAMES RUSSELL and SONS have great pleasure in calling attention to the annexed award:—

"EXHIBITION OF THE INDUSTRY OF ALL NATIONS, NEW YORK.

"Office: No. 6, Charing-cross, London, April 6, 1854.

"Gentlemen,—I have much pleasure in informing you that the Jury has awarded to your firm 'HONOURABLE MENTION FOR LAP-WELDED IRON TUBES,' and also at full liberty, if you deem it likely to promote your mercantile advantage, to affix to these articles, during the season 1854, a card whereon this Award is printed, and also your prices, with name of agent, &c.—I am, gentlemen, your obedient servant,

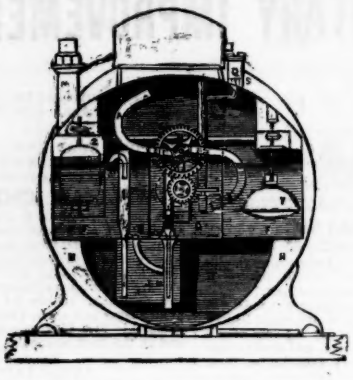
"JOHN H. [illegible], Secretary.

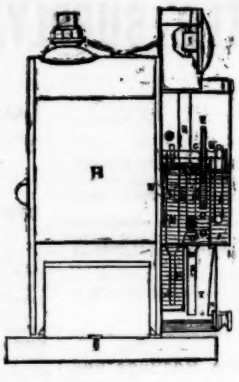
"Messrs. JAMES RUSSELL and SONS, Wednesbury, STAFFORDSHIRE."

CROSLEY & CO.,

GAS-METER MANUFACTURERS,

103, SOUTHWARK BRIDGE ROAD, LONDON.





SOLE LICENCEES AND MANUFACTURERS OF

W. CROSLEY'S AND CROSLEY AND GOLDSMITH'S

PATENT STANDARD SELF-ADJUSTING AND COMPENSATING GAS-METERS,

By which the True Water-Line is constantly maintained, and accuracy of measurement at all times secured.

Manufacturers of LOWE'S PATENT MOTIVE-POWER METER, for situations where there is an inadequacy of pressure to supply the special requirements of certain consumers in low grounds during the day or night.

Also, Manufacturers of EXPERIMENTAL METERS, GASHOLDERS, GOVERNORS, MINUTE-CLOCKS, PHOTOMETERS, &c. &c., similar to those used by Mr. King, of Liverpool.

C. and Co. continue to manufacture ordinary WET METERS of the very best description, Mr. W. Crosley having been for many years the principal and confidential assistant of his relative, the late Mr. Samuel Crosley, of Cottage Lane, City Road, up to the time of his decease, in which capacity he communicated to W. C. the secret of the mixture of the metals which has rendered the Crosley Meter so durable and superior to all others, as is evidenced by a large number of them being still at work, after having stood the test of nearly a quarter of a century's use.

THE PROVINCIAL

GASLIGHT AND COKE COMPANY (LIMITED).

Incorporated pursuant to the Joint-Stock Companies' Act of 1856.

CAPITAL £100,000, in 10,000 Shares of £10 each.

DIRECTORS.

W. D. SEYMOUR, Esq., M.P., 32, Fenchurch Street, and Lowndes Square, London.

Mr. Alderman ABBEY, Hull.
WILLIAM HARRIS, Esq., Hull.
GEO. WILKINSON, Esq., Hull.

JOHN STEVENSON, Esq., Lincoln.
JOHN T. B. PORTER, Esq., Lincoln.
JOHN HATTERSLEY, Esq., Barton-upon-Humber.

ROBERT ASH, Esq., Hull.

AUDITORS.

JAMES GREEN CARLILL, Esq., Public Accountant, Hull.
BENJAMIN A. TAPP, Esq., Portuguese Vice-Consul, Hull.

BANKERS.

The HULL BANKING COMPANY, Hull.

ENGINEER.

GEORGE BOWER, Esq., St. Neot's.

SOLICITOR.

C. S. TODD, Esq., 15, Bowlalley Lane, Hull.

This Company was formed for the purpose of erecting Gas-Works in country towns and large villages where sufficient local capital was not available for the purpose.

Works are completed at Cottingham and Patrington, near Hull; and at Barrow-on-Humber, and Navenby, and Wellingore, in Lincolnshire. The construction of these Works has been carried out with the greatest economy, and the most improved mode of Gas Manufacture introduced; and the result of three months' working shows that, notwithstanding the lighting is not yet nearly developed in any of these towns—yet, with the present consumption, the profit there from Gas Making is equal to £6 per cent. per annum on the outlay in each of the respective towns, with the prospect of a large increase.

One of the leading features of the project is, to furnish to the Consumers in each town the entire of the fittings required, and experience has fully proved to the directors the soundness and profitable nature of this department of the undertaking. The Company is also prepared to turn to more profitable account those products in Gas Manufacture which have hitherto been considered of little or no value; and an additional source of revenue has arisen from the Company letting fittings, gas-cooking and other stoves, on hire, deriving an income, not only from their rental, but from the increase in the consumption of gas consequent thereon.

Commencing with a limited Capital of £10,000, it has been found that so small an amount was wholly inadequate to meet the requirements of the Company, and a Special Meeting of Shareholders unanimously resolved to extend the Capital of the Company to the amount of £100,000, by the creation of 9000 additional shares.

To make the commercial success of the scheme a matter of still more positive certainty, the Directors require from the Inhabitants of every town where Gas-Works are proposed to be erected by the Company, a guarantee for such a number of Lights as will make the undertaking profitable; and also that one-half of the Capital required for the Plant shall be subscribed for in the place, so as to give the Inhabitants personally an interest in the success of the Works. This principle has been successfully tested in the villages of Navenby and Wellingore, near Lincoln.

The Directors have reserved 4000 of the additional Shares for distribution in the towns into which the Company's operations are to be extended, and 4000 of the remaining Shares are now offered to the public, on which three calls of £1 each will have to be paid as follows:—The first £1 per Share will be required to be paid to the Company's Bankers at the time of the application for Shares; the second on signing the Articles of Association; and the third in three months from the date of the application.

Application for the Shares must be made to the SECRETARY, at the Company's Office, 15, Bowlalley Lane, HULL.

N.B.—If no allotment of Shares be made in pursuance of the above application, the money paid to the Bankers will be returned, free of charge; otherwise, it will be credited to the applicant on account of the amount payable on the Shares allotted.

TO GASHOLDER MAKERS AND OTHERS.

THE Directors of the Carmarthen GAS COMPANY are prepared to receive TENDERS for the supplying and fixing complete on their Works, at Carmarthen, a GASHOLDER, 50 feet diameter, and 14 feet deep, with Pillars, Brackets, Rollers, Balance-Weights, &c.; a 7-inch inlet and an 8-inch outlet Pipes, Syphons, and Hydraulic Valves.

Also, a Masonry TANK (with a Well, 7 feet wide by 10 feet long) for the above Gasholder to work in.

Also, a Cast-iron SCRUBBER, or Braced Condenser, with Pass-by Slide Valves, &c., fixed complete to the existing Works.

The Contractor will have to find all scaffolding, &c., that he may require.

The successful applicant will be required to furnish a detailed Specification of the Gasholder.

The Contractor will be required to keep the Gasholder and Tank in working order for one year from the date of completion.

Plans and Specification of the Tank and Well, the Scrubber, and Elevation of Gasholder, may be seen on application to the Engineer, at the Company's Office, Gas Station, CARMARTHEN, on or after the 21st day of March inst.

The Directors do not bind themselves to accept the lowest or any Tender.

Tenders must be delivered (or sent post-paid), free of expense, to the Company's Office, Gas Station, Carmarthen, on or before the 3rd day of April, 1857.

BENJAMIN LEWIS, Engineer.

Carmarthen, March 9, 1857.

TO GAS COMPANIES.

TWO Gasholders for Sale, by Private CONTRACT.

A GASHOLDER, 40 feet diameter by 24 feet deep, with Metal Columns, Chains, Balance-Weights, &c., complete. Erected in October, 1854, and in first-rate condition.

Also, a GASHOLDER, 34 feet 6 inches diameter by 22 feet deep, with Metal Columns, Chains, Balance-Weights, &c., complete. Erected in 1852, and in excellent condition.

The above are to be sold solely in consequence of the removal of the Works.

For particulars, apply to T. W. HORNSBY, Secretary to the Stockton New Gas Company, 151, High Street, STOCKTON-ON-TEES.

PORTSMOUTH.—GAS-WORKS TO BE LET.

THE Portsea Island Gaslight Com- PANY will be prepared (on or before the 1st day of May next) to receive TENDERS for the MANUFACTURE of GAS for supplying the said Island from and after the 30th of June next.

The Works are most conveniently situated, and, being close to the water's edge, afford every facility for taking in Coals, &c.

A copy of the proposed Contract and Conditions may be seen at the Company's Office, PORTSEA, and all particulars obtained, in the first instance by letter, on and after the 20th of March next.

By order of the Committee of Management,

JAMES F. ABSALOM,
Clerk to the said Company.

Gas Office, Portsea, Feb. 14, 1857.

GAS TAR.

THE Board of Directors of the PHŒNIX GASLIGHT and COKE COMPANY are ready to receive TENDERS for clearing away all the GAS TAR made at their three Stations, Bankside, Greenwich, and Vauxhall, in the next two years. The quantity will be about 6000 Butts per annum The Tar will be delivered into Tank-Barges alongside Wharves in the River. Not more than 50 Butts will be allowed to accumulate or to remain on either of the Stations at any one time. The price to be stated at per Butt of 108 gallons.

Sealed Tenders, with the words "Tar Tender" written on the cover, to be forwarded to 70, BANKSIDE (S. E.), on Wednesday, the 25th inst., where further particulars and samples can be obtained.

GAS COMPANIES

supplied with all the WORKING GAS BOOKS, GAS FORMS, &c., on the shortest notice. Also, SHARE CERTIFICATES and COMMON SEALS prepared in the best manner for all New Companies, by

CHARLES & ALFRED DOUBBLE,
REGISTRATION AGENTS,
LAW, PUBLIC COMPANIES, & MANUFACTURING STATIONERS,
14 and 15, SERJEANTS' INN, FLEET STREET,
LONDON.

N.B.—List of Books, &c., sent post free on application.

TO GASHOLDER MAKERS, IRONFOUNDERS, AND OTHERS.

THE Oldham Corporation Gas and WATER-WORKS COMMITTEE are prepared to receive TENDERS for supplying and fixing a Single-lift GASHOLDER, 100 feet diameter and 24 feet deep, with eight Tripod Columns, Pulleys, Chains, &c., at the Hollinwood Gas-Works, near Oldham.

Also, about 200 Tons of Cast metal PIPES, diameters varying from 4 to 12 inches, with Turned and Bored Joints, delivered at the Mumps Railway Station, Oldham.

Plans and Specifications may be seen, and further information obtained, at the Gas and Water-Works' Office in OLDHAM.

Tenders to be sent in on or before Tuesday, March 24.

The Committee do not pledge themselves to accept the lowest or any Tender.

GEO. EMMOTT, Engineer.

TO GASHOLDER BUILDERS.

THE Directors of the Cork Gas Con- SUMERS' COMPANY (LIMITED) are prepared to receive TENDERS for the supply and erection complete of a GASHOLDER 100 feet in diameter, together with the Guide Framing.

The Company do not bind themselves to accept the lowest Tender; and satisfactory security must be provided for the due performance of the Contract.

For particulars apply to Mr. GEORGE ANDERSON, Gas-engineering Offices, 104, Leadenhall Street, LONDON, on or after the 16th inst.

Tenders, endorsed "Tender for Gasholder," to be delivered at the Offices of the Company, 45, South Mall, Cork, on or before the 24th of the present month.

DENNY LANE, Secretary.

TO GAS COMPANIES.

WANTED, a Situation as Manager of a Country Gas-Work, or as FOREMAN of Gas-Works in a large town, by a person who is practically acquainted with every matter connected with the manufacture and distribution of Gas; understands the setting and working of clay and brick retorts; and can have first-class Testimonials. Would have no objection to go abroad.

Address, W. M., care of Mr. W. B. KING, 11, Bolt Court, Fleet Street, LONDON (E. C.).

THE COUNTY AND GENERAL
GAS CONSUMERS' COMPANY (LIMITED).

Incorporated under 19 & 20 Vict., Cap. 47. (Act 1856.)

CAPITAL, £50,000 (with Power to Increase),

In 10,000 *Shares of £5 each. Deposit, 5s. per Share on application, and 15s. per Share on allotment.*

Intervals between the Calls, Three Months, with Three Months' notice, and no Call to exceed £1 per Share.

OFFICES—76, KING WILLIAM STREET, LONDON (E.C.).

DIRECTORS.

EDWARD H. J. CRAUFURD, Esq., M.P., Essex Court, Temple, Chairman.
ROBERT M. CHRISTIE, Esq., C.E., King William Street, City, late Engineer-in-Chief of the Commercial Gas Company.
HENRY W. HAY, Esq., Upper George Street, Portman Square.
ALEXANDER L. IRVINE, Esq., Smyrren Lodge, Peckham, Member of the Metropolitan Board of Works.
JOHN KIRKHAM, Esq., C.E., Tonbridge Place, New Road, late Engineer-in-Chief of the Imperial Gas Company.
Lieut.-Col. C. F. LE HARDY, Porchester Terrace, Bayswater.
JAMES MELROSE, Esq., Hatton Garden, London; and Tividale, near Dudley (firm of Messrs. Melrose and Hussey).
WILLIAM MORRISON, Esq., the Terrace, Kennington Park.
J. F. LYSONS PRICE, Esq., Surbiton, Kingston-on-Thames, Director of the Chartered Gas Company.
GEORGE SILVESTER, Esq., Guildford, Surrey, Director of the Crystal Palace District Gas Company.
WILLIAM SIMPSON, Esq., Bradmore House, Hammersmith.
ERASMUS WILSON, Esq., F.R.S., Henrietta Street, Cavendish Square, Chairman of the Crystal Palace District Gas Company.

AUDITORS (to be proposed at the First General Meeting of the Company).

F. FERGUSON CAMROUX, Esq., 45, Weymouth Street, Portland Place.
SAMUEL THOMAS, Esq. (Messrs. Thomas and Cates), 9, Sise Lane, Bucklersbury (Public Accountant).

STANDING COUNSEL.

THOMAS CHAMBERS, Esq., M.P., Pump Court, Temple, Common Serjeant of London.

SOLICITOR.

Mr. Under-Sheriff CROSLEY, 34, Lombard Street.

BANKERS.

WESTERN BANK OF LONDON, 21, Hanover Square.
BANK OF LONDON, Threadneedle Street.

ENGINEER.

H. P. STEPHENSON, Esq., A.I.C.E., 58, Pall Mall.

BROKERS.

Messrs. CROSLEY, BROTHERS, 30, Cornhill.

SECRETARY.

R. S. PARKER, Esq.

This Company is established for the purpose of extending the benefits of Gas Lighting to towns and villages with populations varying from 2000 to 5000 and upwards, not at present possessing its advantages; also to such other localities as the extension of railway communication may have created or more fully developed.

It is also in contemplation to purchase or lease such existing Works as the Directors may have offered to them on fair terms.

The great progress and improvement of all Gas establishments is clearly demonstrated by the immense increase of its manufacture, the large reduction in price, and the high market value of the shares of most Gas Companies.

The cost of preliminary expenses and management has hitherto, in many instances, prevented the introduction of Gas into small towns; though, notwithstanding these drawbacks, numerous instances exist where towns of small population, involving comparatively but little outlay, pay large dividends; it is therefore anticipated that under the single expense of formation, and the united management proposed by this Company, its dividends will bear a still higher proportion.

The Engineer has already examined several towns, some of which have applied to be lighted; these will in all probability form the first operations of the Company.

Applications for Shares to be made in the subjoined form, and Prospectuses, and other information, to be obtained of the SECRETARY, at the Offices of the Company, 76, King William Street, CITY; or of the Brokers, Messrs. CROSLEY, BROTHERS, 30, CORNHILL.

TO THE DIRECTORS OF THE COUNTY AND GENERAL GAS CONSUMERS' COMPANY (LIMITED).

Offices, 76, King William Street, London (E. C.).

Gentlemen,

Having paid to your credit with* the sum of £ , I request you will allot me Shares of £5 each in your Company, which number (or any less number you may grant me) I hereby agree to accept and to pay for, in such manner and at such time as you may direct.

Dated this day of 185

Name in full. . . . . .
Address . . . . . .
Occupation . . . . . .

* "The Western Bank of London," or, "The Bank of London," as the case may be.

By Her Majesty's Royal Letters Patent.

JAMES MEACOCK,

MANUFACTURER OF

PATENT DRY AND IMPROVED WET METERS,

Also of every Description of Apparatus used in the Gas Factory, as well as in Gas Distribution.

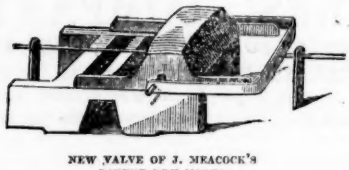
7, SNOW HILL, & GILTSPUR STREET, LONDON.

Established 1836.

PATRONISED BY ALL THE GAS COMPANIES OF THE METROPOLIS, AS WELL AS MOST OF THE PROVINCIAL TOWNS.

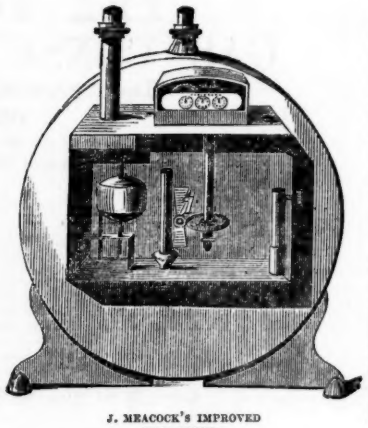
J. MEACOCK, in returning thanks for the liberal favours he has received, most respectfully calls the attention of those interested in Gas Lighting to the improvements of his DRY METER, which has obtained HER MAJESTY'S ROYAL LETTERS PATENT, and which contains all the desired requisites for simplicity, durability, and faithful registration; also to his improved WET GAS-METER, which all the leading Gas Companies have been pleased to patronise; and begs to solicit the continuance of their commands for the above, as well as *Experimental and Station-Meters*, Pressure-Indicators, Governors, Gauges, Photometers, and every apparatus in use by the Gas Engineer, which he will warrant of the very best materials and workmanship, and at most economical charges.

J. MEACOCK'S PATENT DRY METER.



NEW VALVE OF J. MEACOCK'S PATENT DRY METER.

OLD VALVE OF THE ORDINARY DRY GAS-METER.



J. MEACOCK'S IMPROVED WET METER.

In the above Diagrams of Meters will be seen J. MEACOCK'S patent method of securing the Leather Diaphragm of his IMPROVED PATENT DRY METER. Instead of using the soldering iron for the purpose, by which the Leather is more or less injured, it is held between two flat Metal Rings, and screwed up sound on to a frame to receive it, the outward rim of which and screw-heads are shown in the drawing.

The Valve adopted in the above Patent Meter is also shown, as well as the ordinary Slide-Valve; the advantages of the former in not rising from its facing will be very apparent to the practical Gas Engineer, to whom it is of vital import.

WET GAS-METERS REPAIRED AND RECONSTRUCTED WITH J. MEACOCK'S MODERN IMPROVEMENTS.

J. MEACOCK begs leave most respectfully to submit to the notice of Gas Companies his PATENT DRY GAS-METER, trusting thereby to receive the same encouragement that has been so kindly awarded him in respect of his Improved Water Meter, which has been patronised by all the Metropolitan Companies, as well as most of the Provincial Gas-works.

The public having been induced to desire Dry Gas-Meters in preference to Wet, and many Gas Companies being willing to yield to their wishes, if a correct measurer, not liable to fluctuation of registry, of good materials and workmanship, and when repair was necessary, of being put in order by simple means, J. M. has been induced to apply himself to the production of a Dry Meter, possessing those requisites, for which he has obtained her Majesty's Royal Letters Patent.

It is not generally known, but very frequently in fitting up the ordinary Dry Meter, the leather of the diaphragm is destroyed during the process of soldering, by coming in contact with the hot soldering iron. In his present process, J. M. has done away with its use, no solder being necessary, the leather being secured by two flat metal rings, between which it is screwed, rivetted, or overlaid; the perishing effect of hot tools to leather being avoided, its durability must be longer; also, by this means, its repair when needful is most simple, as a new leather diaphragm can be applied by merely unscrewing the old one from the rim or frame to which it had previously been screwed up sound.

In the ordinary Dry Meter frequent variations of registry have been detectable from defective valves, which tilt or rise from their facings: the slide-valve of this Patent Dry Meter will not allow any carbonaceous matter common to coal gas to tilt or lift the slide from its facings, and hence no variation. It will be found not only a correct measurer, but free from fluctuation.

The heavy wear and tear to which the Meters of Gas Companies are subject, have at all times made it desirable to have them of the best materials and workmanship. Unfortunately, in the greater number of the ordinary Dry Meters, neither of these requisites were carried out, for, as they were not to contain water, most inferior workmen and materials were employed in their construction. J. M. begs leave to assure those who may honour him with their commands, that nothing but the stoutest materials for cases, the hardest gas-resisting metals, and best foreign leather for the interiors, will be used, and none but first-class workmen employed in their construction (the properties which his Improved Water Meter is well known to possess, and which has obtained him that extensive patronage), will be strictly carried out in his PATENT DRY METER.

In respect of any orders with which he may be honoured, he is willing to give a stamped guarantee to keep the same in repair, *free of all charge*, for five years, and allow the customary discount off the original list price.

J. M. has annexed diagrams of his Patent Dry, also of his Improved Wet, Gas-Meter. In the former will be seen his patent mode of securing the diaphragm. The former and present valve are also shown, and the advantages of the latter will be, by practical persons, easily understood.

METERS SENT ON APPROVAL.

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NOTICES.

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THE JOURNAL OF GAS LIGHTING,
WATER SUPPLY, & SANITARY IMPROVEMENT.

TUESDAY, MARCH 17, 1857.

NOTES UPON PASSING EVENTS.

AT length one of the leading members of the House of Commons appears to have opened his eyes to the rapid strides of our Government towards the continental system of administration, and to the consequent increase of the Civil Service Estimates in order to defray the expenses of the numerous boards, commissions, and other jobs, it has been the fashion of late to consider essential for the good working of the representative system! "'Tis never too late to mend," says the proverb; so we will not quarrel with Mr. Gladstone's tardy appreciation of a danger we have ourselves endeavoured for years to call attention to; but will content ourselves with hoping that, when the House of Commons shall meet, after its "penal dissolution," Mr. Gladstone will do more than content himself with vague denunciations of a growing evil. The class of interests this JOURNAL endeavours especially to represent, has, indeed, suffered so severely from the conduct of some of these new bodies of useless tax consumers, that it is incumbent upon us to keep the question raised at this late period before the public; and we certainly will do all that lies in our power to demonstrate the utter inefficiency for good, and the tendency to evil, of such bodies as the Inclosure Commissioners, the Copyhold Commission, the Board of Health, some departments of the Board of Trade, the Board of Education, &c. &c. Unfortunately, there are so many persons interested in maintaining the system of corruption with which these bodies are connected, that there is a disinclination both in the House of Commons, and out of doors, to sound the whole depth of this social plague. It *is*, however, an evil of far too serious a nature, to allow of its being disposed of after one speech by Mr. Gladstone. The nation should know "the reason why" it is thus subjected to a continually increasing taxation; and why its representatives continue to avoid the discussion of the necessity for the existence of many departments of State Administration through which the money so hardly raised is now squandered. Had the Administrative Reformers been in earnest, we are convinced that it would not have been at the last moment of a Parliament, in haste to commence the canvass for the forthcoming elections, that this question would have arisen; but it is to be feared that these new patriots have no further principle than the one conveyed by the familiar French phrase—"*Ote toi de là, que je m'y mette,*" for they have carefully avoided an examination of the necessity for retaining the various new offices, and only address themselves to securing a good choice of office holders. Indeed, when such men as Mr. Chadwick are put forward by the Administrative Reformers to continue the paste and scissors style of blue-book writing, which did so much mischief whilst he himself was in power, for the ostensible purpose of exposing the blunders of the "Devising Heads and Executive Hands," it is impossible to put any faith in their sincerity; and they who know something of the secrets of party warfare, as it is now waged, must feel that there is little chance for the public's "coming by its own," in consequence of the "fall out" between such men as these and the Ministry. When her Majesty's opposition shall seriously insist upon an impartial inquiry into the constitution and the operation of the new boards, there may be some chance of checking the dangerous tendencies to which we have alluded; and we can assure that party that there are few more promising sources of political capital open to them. But the public may be sure that no real good will be effected in this matter, unless it be by the really independent country members.

A very cursory inspection of the Civil Service Estimates will prove that Mr. Gladstone had ample reason for his anxiety; and, moreover, it furnishes a tolerable illustration of the adage that "Statistics is the science of disguising truth under a multitude of figures." Take, for instance, the cost of public works. It is impossible to say how much we, as a nation, are spending in this way, or who is responsible for the outlay. The new barracks, fortifications, arsenals, shops for carrying on trading operations in competition with private industry, harbours and dockyards, with all their shameful waste and extravagance, are supposed to be included in the army and navy estimates; and, as there are few men able or willing to examine the operations of the government functionaries in these matters, they have full scope. But the public works for the civil service come under everybody's ken, and yet no heed is paid to them. The royal palaces, parks, and pleasure-grounds are put down at a sum of £311,270; the cost of the offices of Woods and Works at £48,235; the new Houses of Parliament, £138,086; so that, without attempting to ascertain what other sums may come under his control, it would appear that the First Commissioner, "Big Ben," in fact, disposes of about half a million of money almost at his own discretion; for it is a farce to suppose that the discussions in a committee of supply act as a real check upon the electioneering speculations of the potentate who rules over the Marylebone parks. Then the Inspectors of Factories are put down for £21,995; the Copyhold Commissioners and imprest expenses at £28,883; the Registrar-General's Office at a total sum of £47,817; the grant for science and art is £73,855, and for scientific experiments £4739; and our friends of the Board of Health are made to ask modestly, in their own name, £12,325, besides £2000 for vaccine establishments, £7000 for burial-grounds' inspections, and an unknown share of the £450,875 for printing and stationery, and of the £8000 for the sundry commissions (temporary). England, indeed, is rich enough to pay for its glory, and for many of the blunders of its rulers; but it would be far more satisfactory if the tax-paying portion of the public knew exactly what it was called upon to pay for, in order that it might estimate the value of the services it receives in return. The Inspectors of Factories, the Copyhold Commissioners, the Registrar-General's Office, the branch of the Board of Trade for Science and Art, and the General

Board of Health, we boldly assert, do no good whatever, whilst they seriously interfere with private rights, and cost the nation at the very least £200,000 a year. An honestly-constituted select committee of the House of Commons is, in fact, wanted to inquire into the necessity for revising the civil service. Instead of that, we have a commission of government nominees at an expense of £5018, and an unknown portion of the printing estimate, for the sake of recording the blunders of the candidates for situations of landing-waiters and porters.

If the manufacturing and commercial interests would only exercise the weight and influence recent political events have thrown into their hands, it would be easy to compel our rulers to pause in their mischievous career of "continentalising" our institutions. To do this effectually, however, they must have some better organisation than now prevails; and again and again do we urge them to imitate the conduct of the Corporation of London, and to appoint a remembrancer to watch over every measure likely to affect them. Until this is done, the commerce of the country will be at the mercy of place-hunters and Government commissions; in the meantime, we would also urge our readers not to lose sight of domestic affairs in the midst of the turmoil designedly raised about the events happening on the other side of the globe. Already, during the Chinese discussions, some disgraceful jobs have slipped through the House of Commons; and more will pass if attention can be diverted from them. By the way, no one has yet brought before the House of Commons the ridiculous story of the Brussels Congress, though the scientific reputation of England was then sadly damaged.

Out of doors, however, the proceedings of some local boards of health are attracting an unpleasant amount of attention. Thus, at Southampton, the sanitary measures stated by the Registrar-General to have produced so beneficial an effect upon the health of the town, have practically resulted in the establishment of a gigantic nuisance, and a consequent injunction from the Court of Chancery. At Croydon, a similar state of things has occurred, and now the boasted sewerage-works will have to be remodelled, in all that concerns their outfall at least; for the arbitrator in the case of Chasemore *v.* the Local Board of Health has decided that the sewerage shall no longer be poured into the mill-head. What is the use of the General Board of Health, we would ask, if it tolerate—nay, rather, if it create—such nuisances? What protection has it offered to Southampton, or Croydon especially, or to any of the towns, such as Dartford, Hitchin, Rugby, Sandgate, Dover, &c., where the systems it imposed have proved such dreadful causes of disappointment and loss to the unfortunate rate-payers?

The questions connected with the outlets of town sewers are certainly amongst those which it is important to consider and provide for directly the Legislature re-assembles; for the evils attending the present unsatisfactory state of the law with respect to them are increasing daily. Even Mr. R. Rawlinson himself, who has expressed, very properly, a very strong opinion as to the impolicy and injustice of allowing corporate bodies to pour their foul refuse into the first river at hand, appears, from the reports upon the Tynemouth and the Chorley sewerage, to have contented himself, in both cases, with discharging the sewerage matters into the nearest stream. Very possibly local considerations may have rendered this course advisable, or less objectionable than usual, but really it does appear to us that, in strict justice, every town should be compelled to undertake the outlay, and to execute the works required to prevent any contamination of rivers. We are sure that Mr. Rawlinson will agree with this opinion, and we hope that the commission of which he forms one will propose some substantive measure for the purpose. The results obtained by the Leicester Sewerage Manure Company, show that it is practicable to disinfect sewerage waters. The failure of that concern as a commercial speculation proves nothing against the justice of compelling towns to adopt the same, or an analagous system. It only proves that the Board of Health "romances" of the value of sewerage manure were as absurdly untrue as the dogmas on the subject of capillary tube sewers, which we congratulate Mr. Rawlinson on having at last discovered to be as ridiculous as every "Great George Street" authority has always proclaimed them to be. Unfortunately, Mr. Rawlinson's experience comes late; and, still more unfortunately, numerous towns have already incurred a heavy outlay, which must be in vain, if the old theories of the General Board of Health be thus shown to be incorrect.

Messrs. Morgan and Horn have forwarded to us a copy of their reply to Mr. Wicksteed's report on the Dewsbury water supply, and a note which will be found in our correspondence. After a perusal of both documents, (i.e., the report and the reply), we see no reason to alter our opinion upon the question actually raised by Mr. Wicksteed. He distinctly says that the scheme upon which the Dewsbury works are being constructed is "impracticable," that is to say, that it must end in failure and disappointment; and really we must be permitted to retain our opinion that so direct a condemnation, from a man of such eminence and ability, renders it the bounden duty of the Local Board of Health to submit their proceedings to some additional, and some decidedly impartial, investigation. It strikes us also that Messrs. Morgan and Horn, themselves, ought to insist upon some further inquiry; for their unsupported assertions will hardly weigh in the opinion of the world in general, against those of Mr. Wicksteed; and the reasons given for the condemnation of the works are certainly not disposed of in their reply. We ourselves know nothing of the locality, or of the details of the works, and repeat that we offer no opinion upon their merits; all that we contend for is, that the Local Board of Health owes it to its constituents to take additional advice upon the subject, and to consult some engineer of equal eminence with Mr. Wicksteed, and that engineer must also be unconnected with the General Board of Health, which has hitherto deceived the people of Dewsbury. We may, however, at once record our dissent from the very extraordinary doctrine laid down by Messrs. Morgan and Horn, that works of the description now executing for the three towns should be executed with reference to the *average* rain-fall, instead of with reference to the *least* rain-fall. Indeed, the very table printed by them (page 8 of their reply) shows that during '53, '54, and '55, the total quantity which fell was below the average, and that the quantities per month were equally of a character to render calculations based upon the average unsatisfactory and dangerous. The Local Board of Dewsbury, indeed, may be sure that, unless their works are designed with reference to the *least* rain-fall, they will very often find their constituents without water when that fluid is most wanted. Upon the subject of absorption, and evaporation, also, we cannot agree with Messrs. Morgan and Horn: for the quantity so lost to catchment Water-Works actually *does* differ between the limits of 9 or 16 inches, according to the nature of the ground; and it requires great skill and practical knowledge to be able to say beforehand what it may be in any particular case. Then, as to the demand per head, the Local Board of Dewsbury may depend upon it that with the constant delivery it will more probably be 40 gallons per head per day than 15, notwithstanding the worthless "Report on the Metropolitan Water-Supply," 1850; and we are sure that unless the new works are able to furnish at least 30 gallons per head during the next 30 years, they will require extension at some future period.

On Saturday last, the first boat of the Thames Steam-Tug Company made its trial trip from Blackwall to above Richmond Bridge, under very favourable circumstances. Throughout the day the wind blew almost a hurricane; but the *Harbinger* breasted it most successfully, and attained at times (with tide) a speed of at least 14 miles per hour; although, of course, she was not designed especially for speed. Her hull is a beautiful model of a fast river freight and tow-boat, of wrought iron; and her engines, by Bolton and Watts, are two 25-horse power (nominal, but actually working by indicator to 210), of 2 feet 6 inches diameter, 2 feet 3 inches stroke, making 44 strokes per minute. The length of the ship is 100 feet; the breadth of beam is 13 feet 6 inches; the draught of water is 3 feet 7 inches, loaded; the width over the paddle-boxes is 25 feet; and the paddle-wheels are 11 feet diameter by 5 feet wide. The *Harbinger* is the first of a class of vessels intended to tow barges in the upper reaches of the Thames, and to restore, we hope, to "the silent highway" some part of its former activity. Most sincerely do we wish that she may be, as was said on the trip, the *Harbinger* of success to the company, and that by their operations, in connection with the Brentford Railway and Docks, some considerable portion of the heavy goods traffic may be thus withdrawn from our already overcrowded streets.

In one of our last numbers, we called attention to the prospectus of a new gas company, for lighting small towns and villages; this week, we also beg to direct our readers to the advertisement of the Provincial Gas-light and Coke Company, which

has already been practically at work in the same field. It appears that the Provincial Company commenced their career some time since, with a capital of £10,000 ; and that their operations have been so successful, that their calculations have been so far confirmed by experience, that the directors feel justified in appealing to the public for an extension of their capital. There is great prudence in this course of action, and it certainly ought to inspire confidence in the managers of the company, who have thus tried the correctness of the calculations submitted to them, before embarking in any serious outlay. As to the undertaking itself, we are naturally sanguine that it will succeed, and that it will be productive of very great benefit to the agricultural districts, not only by securing them better lights, but also by furnishing them with a new supply of a valuable manure; and we step rather out of our way to urge the claims of the Provincial Gas-light Company for the favourable consideration of capitalists and of the public. We observe, moreover, that some of the parties connected with this useful movement have undertaken the gas-lighting of the rising port of Harlingen, in North Holland, and are about to extend their operations in that country. It is strange that we should, as a nation, eagerly embark in Russian, Turkish, Euphrates railways, and yet treat with comparative neglect the wonderfully safe and advantageous field for speculation offered by Holland—the country most allied to us in feeling, religion, and manners of continental Europe, and certainly the one where money can be most profitably employed in works of material improvement. Even the comparative commercial failure of the Amsterdam Water-Works proves nothing against our position ; for it is more than questionable whether, if they had been properly managed in the beginning, this failure would have occurred.

THE GAS QUESTION IN CORK.

"Happy is the man," says an ancient proverb, "who can be instructed by the misfortunes of others," and simple though this process may seem to be it is one which we find more seldom acted upon than is generally supposed in the affairs of this world. No doubt a "burnt child dreads the fire," but this fact produces no such sentiment in the mind of the unburnt child, whose education has yet to be acquired in the painful and costly school of experience. Now the citizens of Cork have never been "singed" with gas shares, and, unlike their London brethren, know nothing about the tingling miseries of a "no dividend day;" moreover they are rather "flush of cash" at the present moment, and require bleeding to prevent an apoplectic determination to the head. Talk not to them of the advantage they enjoy from the investment of English capital in their gas-works, and by which they are left at liberty to invest all their own capital in promoting the industrial and commercial undertakings of their own city: away with such paltry argument! money is not money, if it is not Irish money, gas is not gas if it is not Irish gas. Shall Cork be dependent upon anything in the world but Cork for its own wants? Perdition to the idea! Cork is a world in itself, self-created and self-sustaining; like Lear it scorns all extrinsic aid, and exclaims indignantly, "Off! off! ye lendings;" it "owes the worm no silk, the cat no perfume;" and, under the able fooling of Mr. Maguire, will shortly "owe the foreigner no gas." Yes, Cork will raise its own coals, make its own iron and bricks, breed its own contractors, naturalise Mr. Anderson, and under the influence of a Cork board of Cork directors, supply itself with genuine Cork gas, to the delight of every citizen of Cork. Nay, more! under the same sagacious influence it will grow its own tea, coffee, sugar, spices, and grapes, make its own port, sherry, madeira, claret and brandy, and, not to be outdone in anything, dig its own diamonds, rubies, gold, and silver; meanwhile speaking a language not understood and not to be understood by any other nation or people whatever. Thus will the City of Cork for ever get rid of Mr. Maguire's intolerable bug-bear—"*the anomalous and degrading position of being dependent upon utter and unknown strangers!*"

Now, in all sober earnestness, let us entreat the people of Cork, and of Ireland in general, if any there be who have adopted these crude notions of Mr. Maguire, to examine for one moment the consequences of this absurd predilection for seclusion and (we must make a new word for it) Corkism. Nor would it be foreign to the real interest of Ireland if such an examination was accompanied by an inquiry into the fitness of a man like Mr. Maguire to occupy the position of parliamentary representatives in a House of Commons devoted to the advancement of Free-trade all over the world; men of so dwarfed and stunted an intellect, or of so selfish a disposition, as either not to appreciate the simplest principles of social and commercial intercourse, or, seeing them, to sink every other consideration in a sordid desire for personal interest and aggrandisement. Of all the evils and miseries under which Ireland labours, and has long laboured, there is not one which in malignity and mischief approaches the intense calamity caused by the flatulent and, in every sense of the word, empty misrepresentatives of Irish interests in the House of Commons. Happily, in England, a man who should propose to represent Wiltshire, or the City of York, upon the principle of excluding Irish bacon or Dublin ham, because furnished by "utter and unknown strangers," would meet with the scorn he deserved; but, to the misfortune of Ireland, we find that even English capital is to be excluded by one who hopes to make a merit of this exclusion in the eyes of an impoverished constituency, upon no better grounds than "the anomalous and degrading position of being dependent," &c. &c. There is a merit in consistency, and in this spirit Diogenes broke his pitcher; but is Mr. Maguire quite sure that "gas" is the only thing for which he is placed in "the anomalous and degrading position of being dependent upon utter and unknown strangers?" Or does he think that the people of Cork are such "utter and unknown strangers" to common-sense, as not to see through his attempt to parody Mr. Pearson's "twopenny" patriotism? The plain truth is, that Mr. Maguire's scheme is, and he well knows it, an entire failure; the shares have not only not been sought for by "utter and unknown strangers," but have been most suspiciously regarded by the citizens of Cork; and as to the "five-sixths" so eloquently enlarged upon, we are credibly informed that the hard cash realised amounts only to £2500, no small part of which has already disappeared in the shape of preliminary expenses. Mr. Maguire talks rather vaguely about £50,000 as the sum total of his requirements, and upon this he proposes to raise a rental of £15,000, but Mr. Maguire omits the small item called "parliamentary expenses," and takes for granted that the "old company" will quietly submit to be extinguished without resistance. Now, we beg to put him right upon these matters: the "old company" has resources elsewhere, and, if we know anything of English firmness, will not hesitate to sacrifice its profits at other places to maintain its position against fraud and injustice in Cork.

The history of Limerick, London, Dublin, and many other places will warrant the company in pursuing this line of conduct; and although a fanatical ebullition may, for a time, lead the Corporation of Cork to prefer dear gas to cheap gas, yet, as regards the consumers at large, there is little doubt that in the end the "breeches' pocket" will carry the day. The "old ympany" has only to remain firm and make up its mind to a ear or two of tribulation, which will be afterwards amply recompensed by the unconditional submission of the little that will then remain of Mr. Maguire's project; though we grieve to think that upon the gas consumers of Cork must eventually fall the payment in full of this native gas-making experiment. Meanwhile, Mr. Maguire's hands will not be idle if he really intends to supply the street-lights of Cork with gas on the 1st of January next; and we more than half suspect that, under such circumstances, the article "leakage" will prove to be an important question; but things of this kind are best learnt by experience, otherwise we might suggest the employment of Mr. George Flintoff in such a case, as we learn that he is now disengaged in Dublin, and has lately transferred his "luminosity" to Newry, where the natural elasticity of his assertions will be less cramped and contracted by matters of fact than in the former city.

It strikes us that the part taken by Mr. Anderson in this Cork affair is, to say the least of it, rather equivocal, but Mr. Anderson no doubt sees his way to a comfortable job; yet we would suggest to him an inquiry, not altogether devoid of interest, as the new company is "limited" in more senses than one. Who is to pay the contractors, engineer, &c., in case the Cork contributions are insufficient? £15,000 seems to be all that can be raised in Cork and its neighbourhood, and £50,000 is admitted to be required for the undertaking. Where is the balance to come from? Royal British and Tipperary Bank swindles are fresh in the recollection of us all; and St. George Steam Packet speculations are not yet quite forgotten in Cork. With a powerful and wealthy competitor in the field, contractors will be chary about accepting shares in payment for their contracts. Mr. Anderson is playing with double-edged

weapons, and who can tell how soon the same arms may be turned against himself elsewhere. Unless he wishes to descend into acting the part of a satellite of the Flintoff luminary, the sooner he washes his hands of the concern the better it will be for his own reputation.

Circular to Gas Companies.

One of the most important cases which have lately been tried in matters affecting the interests of gas companies, was the case lately attempted to be raised by the Worthing Local Board of Health against the gas company of that town, on account of its dealing as it thought fit with some portions of the refuse of its manufacture. Fortunately, the magistrates of Worthing have taken a fair and reasonable view of the intentions of the Legislature in passing the very bungling statute under which the informations were laid; for evidently it could not have been its intention to have thrown difficulties in the way, or to enhance the cost, of manufacturing gas for public lights, which every day's experience shows to be an article of inevitable necessity; and it must be equally evident, that to prevent the sale of "ashes" by the company would be tantamount to increasing the cost of production of a commodity for which the public eventually must pay a remunerating price to the manufacturer. It is not always, however, that magistrates take such common-sense views of legal questions; and the terms of the acts appealed to in the Worthing case were sufficiently vague to warrant anxiety on the part of the gas company as to the probable interpretation to be fixed upon them. *De minimis non curat lex;* and so, perhaps designedly, there was a strange confusion or obscurity as to the rights of the literary dustman of Worthing, and of the ash or breeze producers, which might have proved a source of considerable loss and annoyance. In the present instance no mischief has arisen: but who can say whether all the learned Thebans of the quarter sessions will take similar views upon the subject? although unquestionably they ought so to do.

There are two remarks to be made with respect to this unimportant local squabble—as it may seem to the uninitiated. The first is, that the pretentions of the Local Board of Worthing are indications of the same tendency on the part of all such bodies, to place themselves in direct antagonism with private companies, of which we have already seen so lamentable an instance in the case of the Dover Local Board's behaviour to the Water Companies of that town; and of their desire to strain the interpretation of the law, in the most unfavourable manner possible, against them. The second is, that it becomes more and more evident that private industry requires a special agent to examine, in its behalf, the various measures submitted to the Legislature. Had they already established some such organisation, it would have been almost impossible that gas companies could have been exposed to the annoyance and danger which menaces them on the score of the disposal of their ashes; and we would observe that this remark applies equally to other trades converting large quantities of coal. But this is only one, and, comparatively speaking, a very unimportant illustration of the unsatisfactory nature of their position, so long as General Boards of Health exist, or the Government intermeddles with the operations of trade, under the guidance of mistaken, even when amiable, theorists. The mode of obviating the inconveniences arising from empirical legislation for the future may lead to the suggestion of efficient remedies for the past; but something should at once be done to ensure the defence of companies who are thus menaced with danger, whether they have a parliamentary title, or merely "a musty parchment," as Mr. Lowe contemptuously designated ordinary deeds.

We may be allowed to remind our readers that, in the Dover case (noticed in our number for August, 1855), the question raised was as to whether, or not, a company were *legally* established if it were in existence without an act of Parliament. This question was never tried in court; but, as Sir A. Cockburn is already on the Bench, and Sir R. Bethel is likely soon to be equally honoured, there seems little reason to hope that the law will be interpreted favourably for companies; for both those lawyers gave decided opinions against the right of the Dover Water Companies for compensation for the destruction of their water-works. Now, a question arises as to what constitutes the difference between "ashes" and "breeze;" and certainly the first impression we ourselves derived from a perusal of the 96th sec. 10 and 11 Vict., c. 34, was unfavourable to the company. The magistrates have very properly looked to the spirit, rather than to the letter, of the law, although, as we will show, they were correct even in their interpretation of the letter; but who can tell what other attack may be looming in the future against those convenient objects of plunder, private companies? The claim for ashes has been dormant even at Worthing for some time; and, as the General Board of Health has nothing to do—as Mr. T. Duncombe very properly said—it may raise up other claims equally unreasonable, and equally annoying.

It is said that definitions are dangerous; but notwithstanding this proverb we would add that the word "*ashes*" in English, like "*cendres*" in French, means the refuse of wood or other combustible matters after they have been burnt and consumed by fire; whilst the word *breeze*, evidently derived from the French *braise*, means a combustible matter drawn from the furnace before combustion has been completed, in order for its sale for peculiar industrial purposes. The value of breeze in brick making, or lime and cement burning, depends, in fact, upon its retaining some considerable portion of its combustible properties; and therefore it is that we contend that the magistrates were correct in their interpretation of the law, though common usage makes the words nearly synonymous. It is mortifying, however, for honest tradesmen to be obliged to study etymology in order to defeat the pettyfogging attacks of the newly-constituted parodies on corporate bodies.

Sunderland and Stockton-upon-Tees are upon the point of disappearing from the list of towns constantly referred to by the advocates of free trade in gas, as evidence of the benefit resulting to the public from unlimited competition. The active opposition which has for some time been carried on between the rival companies in these towns, and which at one time forced down the price of gas to 3s. per 1000 feet, is at an end, and with the approbation of the local authorities and consumers generally, powers are taken in bills now before Parliament to raise the price to 4s. per 1000 feet in Sunderland, and to 5s. 6d. in Stockton-on-Tees. Whitehaven, we believe, alone remains upon the list of places where hostilities are still carried on; but, judging from experience elsewhere, it can only be a question of time as to when both parties shall become weary of their ruinous and senseless warfare.

If any doubt existed respecting the strictly impartial manner in which our columns are open to all classes of correspondents, a sufficient answer will be found in the letter of Mr. Thomas Atkins, which we insert on the occasion "*verbatim et literatim*" as it came to our hands. Many of our readers will probably think that in publishing such a tissue of "twaddle," we have displayed more courtesy than good taste; and, unquestionably, a limit requires to be put upon the claims of those who, like Mr. Atkins, have made themselves so well "*acquainted with the laws that govern Terrestrial Physics of our globe*," as to have become quite incomprehensible to mortals of less intellectual pretensions: there is, we are told, "a glory of the sun and a glory of the moon;" and no doubt there is also a "glory" peculiar to Mr. Thomas Atkins, of so bright and "Gassy" a nature, that we may not rest our eye upon it with impunity; hence we fail entirely to trace any connection between the Journal of Gas Lighting, or aught that has ever appeared in it, and the "Parliamentary Stump-oratory" denounced by our gifted correspondent: nor can we conceive the nature of that impending calamity, so alarmingly depicted in the following prophetic warning:—"*Our globe, Sir, is a compound of solids and fluids, and if we have arrived at the Gassy Period, without understanding it, the matter rests with ourselves; but be assured that the consequences of neglect in this matter will carry its own rod of retribution.*" Horrible sequel! "its own rod of retribution;" and what may that be? or rather, what may it not be? We tremble to guess; but is a comet not expected very soon? This perhaps is the period so anxiously expected by Mr. Atkins, who is "looking for other men and other times, when steam and electricity, backed by the *true* combustion of coal-smoke, will secure for itself a position that will supersede National Palaver and Parliamentary Stump-oratory." Glorious crisis this for the "wild man in Chepstow" to effect another "conjunction with his lawyer," and indulge his "monemania for destruction!"

But, reverting to something like common sense, what on earth does Mr. Atkins mean, or what does he want to prove or disprove? He begins by modestly desiring us to afford him an opportunity of refuting any imputation that may

have been unjustly cast upon him; but not one single instance does he bring forward in which any imputation at all has been cast upon him in the "severe remarks by yourself" to which he alludes. If, however, he is thus parsimonious of defending himself, he is by no means sparing in his attacks upon "useless secretaries, drunken stokers, and inattentive directors;" and, by way of proving that he is not a likely person to "make a job for himself," curiously enough admits that he has "already two or three JOBS in hand, with as many more in negotiation." The advice he gave the Mayor of Stratford-upon-Avon was, it appears, "prompt and decisive;" but what other qualities it had does not ooze out. "True, Mr. Atkins has been engaged in the erection of opposition gas-works in three or four small towns in England," but he assures us that he has "no wish to be engaged in the erection of opposition gas-works," except where "the old company refuses to do RIGHT," of which Mr. Atkins is to be sole judge: he, Mr. Atkins, who knows that "the carbonisation of coal and its management is a chemical and scientific arrangement, which might have been attained by a public and general bill," is to be the judge whether "the old company does right!!" But why do we waste argument upon such "Bathos?" it "is a tale told by an enthusiast, full of sound and fury, signifying nothing."

Communicated Articles.

OBSERVATIONS ON THE COMPOSITION OF WATER.

By M. E. PELIGOT.

Read at the Meeting of the Académie des Sciences, February 9, 1857.

The waters of rivers and streams contain in solution saline matters, which they draw from the ground, and gaseous products, which they derive from the atmosphere; but it is not the air alone which causes the presence of these gases. In a memoir which I had the honour of reading before the "Académie," about two years ago, I showed that, although the nitrogen and oxygen, which all running waters contain in solution, are constantly found under the conditions required by the law of Dalton and Henri on the solubility of gaseous mixtures—conditions which establish in the clearest manner their atmospheric origin—it is not so with regard to the carbonic acid, which is habitually found in the gaseous products extracted from these waters by ebullition. I called attention to the presence of this carbonic acid, which, in the absence of exact quantitative analysis, hitherto generally neglected, still sufficiently indicates its presence by the carbonates of lime and magnesia, which form the greater portion of the product of the evaporation of these waters. By means of a slight modification in the apparatus employed to extract the air from water, I ascertained, from numerous analyses, extending over a period of several months, that carbonic acid forms about one-half of the volume of the gases contained in the waters of the Seine. I assumed that this would also apply to the waters of streams and of rivers; remarking also that, although these proportions were much larger than those given by the majority of chemists who have been engaged in the analysis of water (which circumstance may be attributed to the imperfect construction of the apparatus employed), they differ but little from those given by MM. Thenard and Colin for the waters of the Seine; by M. H. Deville for the same water, and for those of several other rivers; and by M. Dupasquier for the water of the Rhône. But these results had not sufficiently attracted attention; and no one had yet investigated the origin of this carbonic acid.

I thought it possible to attribute the origin of this gas to the dissolving action exercised by the rain-waters on the air confined in vegetable soil. This soil, containing organic matter, which, by its slow decomposition, produces carbonic acid, is surrounded by an atmosphere containing, according to the experiments of MM. Boussingault and Lewy, 250 times more carbonic acid than the external air. Consequently, the rain-waters which fall on soils more or less fertile, there become charged with carbonic acid; and this gas in its turn exercises a dissolving action on the calcareous carbonates which the water, now become a running stream, encounters in the districts it traverses.

But might not the rain-water itself contain at first the carbonic acid found in the streams of which it is the source? In order to answer this question, I determined to ascertain the quantity of carbonic acid contained in rain-water.

The result of this analysis was such as might have been expected. Some rain-water collected in the month of May last year, in large glass dishes placed in a garden, was subjected to ebullition in the modified apparatus described in my former notice. It contained 23 cubic centimètres of gas in each litre, or 23 in 1000. One hundred volumes of this gas contained 2·4 of carbonic acid; the remainder was a mixture of oxygen and nitrogen in the usual proportions; viz., 32 per cent. of oxygen, and 68 of nitrogen.

This inconsiderable proportion of carbonic acid should precisely exist in rain-water, according to the law of Dalton and Henri, in consequence of the co-efficient of solubility, and of the four ten-thousandth parts of this gas contained in the atmosphere. In fact, M. Bunsen, who has been recently engaged in verifying the above law, found by calculation that 100 parts of the air contained in rain-water, taken at a temperature of 10 degrees, ought to contain 2·46 of carbonic acid; and from this it appears that carbonic acid gas is found in ordinary water in much larger proportion than in rain-water. As it was important to compare these results with those which might be obtained from the examination of water of an entirely different nature, I was induced to make a careful examination of the water from the artesian well at the *abattoir* of Grenelle.

Everybody must remember the circumstances which preceded and followed that long and costly operation; and it is equally known that in the month of February, 1841, after seven years of uninterrupted labour, the boring tool of M. Mulot, when at a depth of 548 mètres, in the green sand under the gault clays, at last opened a passage for a body of water, whose yield is never less than from 800 to 1000 mètres cube in the four and twenty hours. The great influence of M. Arago, and the lively interest manifested by the Académie des Sciences in the success of this undertaking, were not without their effect on the prosecution of the works which have led to a result so important.

The composition of this water, rising at a temperature of 28° centigrade was ascertained in 1841 by M. Payen, and in 1848 by M.M. Boutron and Henri. These analyses have satisfactorily established the fact that the water of this artesian well is of good quality; that it is even purer, and less charged with saline matter, than any of the waters which form the supply of the city of Paris. With the exception of their agreement with respect to the weight of solid matter thrown down by the evaporation of equal quantities of water, these analyses, when compared with each other, present results so different as to lead to the conclusion that the composition of the water of the well of Grenelle was not the same at the periods when they were respectively made*. Indeed, it is well known that this well has, at different times, been exposed to irregularities and disturbances in the nature of its supply of greater or less duration. Apart, therefore, from the importance of this investigation, in its bearings upon my own previous observations, it would not be without interest to examine whether the water from this well, which has been now at work for 15 years, presents the same constituent parts in 1848 as it did in 1841. I would observe, moreover, that the new boring undertaken by the city of Paris gives especial interest, at this time, to the examination of waters drawn from considerable depths.

I shall first direct attention to the examination of the gases which are held in solution in the water of the Grenelle well.

It is known that part of this water actually rises to a height of about 38 mètres above the ground-level of the *abattoir*, and discharges itself, at that height, into a copper basin, into which it is conducted by the central tube, of 22 centimètres diameter, and the remainder flows over the space between that tube and the sides of the bore-hole. The jet of water received into the basin, which is about 44 mètres above the low-water line of the Seine, flows out through a large vertical pipe into the upper reservoirs of the Place de l'Estrapade, whose supply it completes.

In the beginning I procured the water which I proposed to analyse at the supply-cock of the *abattoir*, that is to say, nearly at the level of the ground. This cock is branched on to the descending pipe, through which the water flows from the upper reservoir. The water, when collected in a glass vessel, presents at first a milky appearance, which soon disappears, as the small bubbles of gas, producing that effect, are disengaged. By fitting a tube to this cock, in order to collect the gases, a sufficient quantity of air may be obtained, in a very short time, for the purpose of analysis. It is a mixture of nitrogen and oxygen, containing 5 or 6 per cent. less oxygen than the atmospheric air.

Having observed that this air was dissolved in the water with such rapidity that it was necessary, in order to collect it, to pass the tube by means of which it was conveyed to the top of the bottle, which was itself filled with water, and arranged so as to receive it, I suspected that this gas formed no part of the water at the moment of its discharge into the upper reservoir; to assure myself of this, I ascended the platform which supports the reser-

* In calculating, with the assistance of the figures given by M. Payen, and by MM. Boutron and Henri, the quantities of the various elements contained in 100 parts of the residue of the evaporation of the water, the following results are obtained:—

	Analysis of M. Payen.	Analysis of MM. Boutron & Henri.
Carbonate of lime	50·0	14·9
,, ,, magnesia	10·4	4·4
,, ,, potash	16·5	5·6
Sulphate of potash	8·8 }	23·7
,, ,, soda	,, }	
Chloride of potassium	8·0 }	42·3
,, ,, sodium	,, }	
Silica	4·3	7·4
Peculiar yellow substance	traces	—
Organic matter, with nitrogen	1·7	traces
Alumina and oxide of iron	,,	1·4
	99·7	99·7

For the purpose of comparing these results, I have been obliged to calculate the carbonates of lime, magnesia, and potash in their simple form. In the analysis of M. Payen, this latter salt is taken as a bicarbonate; and in that of MM. Boutron and Henri, the three carbonates, as they occur in the water under the double form, are calculated also in that manner. In calculating this excess of carbonic acid, we find that, according to M. Payen, a litre of water leaves, after evaporation, 0·1359 gr., and, according to MM. Boutron and Henri, 0·1347 gr.

voir, and reached by a sort of wooden ladder, between 38 to 40 mètres in height.

I there saw that, in fact, the gas I had thus collected and analysed was nothing more than the atmospheric air drawn into the descending pipe; the water which falls into it producing a draught of air such as is observed in the air-channels of the water-blasts in Catalan iron furnaces. The loss of oxygen suffered by this air in its passage down the pipe may be sufficiently explained by the very nature of the water which draws in and partially dissolves it. It became necessary, therefore, to procure the water for analysis at the fountain head; that is to say, to introduce empty bottles into the central pipe which brings it to the surface.

When exposed to ebullition, this water gave 23 centimètres cube of gas to the litre, containing 22 per cent. of carbonic acid. After the absorption of this last by potash, the gaseous mixture contained

Nitrogen	82·6
Oxygen	17·4
	100·0

This proportion of oxygen, so different from that which is found in ordinary waters, made me suppose that the presence of that gas was still accidental; and that it probably arose from the partial solution of the air contained in the phials which had been immersed in the water. Consequently, a fresh supply of water was taken from the central tube, and the vessels employed to collect it were previously filled with carbonic acid. I also took the precaution of emptying out the water by means of a syphon, which passed to the bottom of the retort in which it was to be boiled, this latter being itself filled with carbonic acid. As it was unnecessary, on this occasion, to observe the proportion of this latter gas, of which a considerable quantity had been absorbed by the water in its various transits, I used the ordinary apparatus for extracting the air from water, and received the gas in a graduated test-glass, containing a solution of potash. This gas, whose volume, at 10 degrees centigrade, was 14 centimètres cube to the litre of water, was *pure nitrogen*. Neither pyrogallic acid nor phosphorus could detect the smallest trace of oxygen.

This remarkable result establishes a very marked difference between the water of the well at Grenelle and the ordinary soft waters, all of which, from their contact with the atmosphere, contain in solution a notable quantity of oxygen. Taking into account the nature of the gases thus shown to be contained in it, this water resembles more closely a mineral than a soft water.

The examination of the saline substances which remain after the evaporation of the Grenelle water, *neglecting the consideration of the trifling weight of those substances*, shows that this comparison is not forced to such an extent as would appear at first sight. The difficulty is rather to fix the position to be assigned to this water among the various kinds of mineral waters: for, at the moment of its arrival at the surface, it is at once silicious, ferruginous, alkaline, and sulphureous. Moreover, its temperature, as we have seen, is 28 degrees centigrade.

According to my analysis, the saline residuum resulting from the evaporation presents the following ingredients:—

Carbonate of lime	40·8
„ „ magnesia	11·5
„ „ potash..	14·4
Carbonate of protoxide of iron	2·2
Sulphate of soda	11·3
Hypo-sulphite of soda	6·4
Chloride of sodium	6·4
Silica	7·0
	100·0

The litre of water gave 0·142 gr., or 0·000142 in weight, of dry solid matter. These figures were ascertained by the direct and oft-repeated analysis of each element contained in the residuum, the soda excepted. The carbonic acid was determined by the loss sustained by the saline mixture when treated with hydrochloric acid in a small weighing apparatus. The potash was measured under the form of chloride of platinum and potassium, being isolated from the saline substances in combination with it by means of the saturated solution of the same double chloride. I have described this process in a former notice, and have established its accuracy by fresh synthetic experiments.

The preceding results agree well enough, as far as regards the principal salts, with those published sixteen years ago by M. Payen, for us to conclude that this water presents essentially the same composition as in 1841. Like M. Payen and MM. Boutron and Henri, I have satisfied myself that the residuum left by this water possesses a very strong alkaline action, which is owing to the carbonate of potash. The water itself, when reduced to two-thirds of its volume, gives a blue tinge to the red test-paper. In its natural state, it turns green the syrup of violets; but the water of the Seine possesses the same property, on account of the carbonate of lime which it holds in solution.

M. Payen was the first to call attention to the presence of silica in this water; and he had the more reason for so doing, inasmuch as the proportion of this substance is much larger at present than that given by him. From frequently-repeated analyses, I have invariably obtained 7 parts of silica in 100 of saline residuum.

Although it is difficult to show the existence of iron in water which has been exposed for a few moments only to the contact of the air, the ferruginous nature of this water is placed beyond doubt. It is, in fact, the source of a small trade carried on by the keeper of the well, who, having one day forgotten a glass which had been left in the upper basin, on finding it the next day, discovered that it was covered with an ochreous yellow deposit; and thence conceived the idea of staining, by this process, common glass vases of a yellow colour, which he sells to the numerous visitors to the well. These glasses, in fact, which are left in the water for a few hours only, contract a variegated tint, produced by a very slight but closely-adhering ferruginous deposit. A prolonged immersion of eight or ten days gives to the ferruginous deposit such a thickness as to destroy completely the transparency of the glass.

I would add that the basin which receives the water on the platform becomes encrusted with a tolerable quantity of hydrated oxide of iron, of gelatinous appearance, combined with silica, confervæ, and sandy substances occasionally brought up by the water. I have detected the presence of manganese in this deposit. I have sought for arsenic; but I had too small a quantity of the deposit at my disposal to assist me in arriving at any exact result. I can only say that if arsenic be contained in this deposit, it is only in an extremely minute proportion.

Lastly, the water received direct from the bore-hole into bottles which contained air, in a very short time left a yellowish deposit on their sides. A very small quantity was sufficient to produce this effect, no doubt attributable to the transformation of the carbonate of protoxide of iron into the peroxide.

I have before said that the water of the Grenelle well was sulphureous. On opening the cock from which the water is drawn, the odour of the hydro-sulphuric acid is easily recognised; but, in truth, the quantity of sulphur contained is so very small, that it cannot be precisely estimated; I have, however, detected the presence of the hypo-sulphite of soda, which is, as we know, the product of the oxidation by the atmosphere of the alkaline compounds of sulphur contained in sulphureous waters, called, emphatically, "natural."

It was the following experiment that convinced me of the presence of hypo-sulphite of soda:—I determined several times, by the assistance of the nitrate of baryta, the quantity of sulphuric acid contained in the water, taking this last in its natural state, or reduced to one-half its volume. One litre of water gives from 25 to 27 milligrammes of sulphate of baryta.

On the other hand, in ascertaining the quantity of sulphuric acid contained in the residue when calcined and treated with hydrochloric acid, in order to separate the silica, I obtained 45 milligrammes of sulphate of baryta to the litre. A second analysis, in which the evaporation took place in the presence of nitric acid, so as to convert the whole of the sulphur into sulphuric acid, gave 55 milligrammes of the above salt. Thus the residue of this evaporation, suitably treated, yields a quantity of sulphuric acid nearly double of what originally existed in the water. It appears to me most likely that the sulphur of this excess of sulphuric acid exists in the water in the form of an alkaline hypo-sulphite, as is the case in all sulphureous waters distinguished as "degenerate."

We may conclude, from all these experiments, that, if the water of the artesian well at Grenelle be still held to be a water of good quality for domestic and manufacturing purposes, on account of the very small proportion of saline matter contained in it, it presents, nevertheless, geologically speaking, many of the characteristics of a mineral water, from the very nature of those substances, and of the gases which it holds in solution. In accordance with the opinion of M. Walferdin, the origin of the spring is attributed to the rain-waters, which, penetrating the green sand in the neighbourhood of Troyes, at a height of 125 mètres above the level of the sea, rise again to the surface through the bore-hole at the *abattoir* of Grenelle. If such be its origin, it must assuredly be a subject of great interest to follow the process of mineralisation of this water, which, although taking its rise in a district bounded by the lower cretaceous formations, still presents in its composition more or less analogy to the mineral waters met with in groups of older date.

As rain-water contains only a very small quantity of carbonic acid, it is most probable that the water of the Grenelle well, in the act of entering the ground, derives some portion of it from the confined air which abounds in the vegetable soil. It is also possible that it may traverse strata which are impregnated with this gas, by the help of which it dissolves carbonate of lime and of magnesia. It is probable, moreover, that the existence of silica may be attributed to the presence of the carbonic acid, which liberates that substance by the decomposition of the felspathic fragments the water meets in its course, and thence also the carbonate of potash, which gives to the silica an alkaline action. As for the nitrogen which this water holds in solution, it would proceed from the air contained in the rain-water, the oxygen of which had been consumed either in oxidising the sulphureous products or in neutralising the alkaline sulphuret, which at a certain time would be produced in this water.

With particular reference to the boring of artesian wells, I may perhaps be allowed to draw this conclusion from the foregoing investigations:—that it is not always desirable to draw the water of

artesian wells from too great a depth: so far from securing a guarantee of purity by this condition, it may happen that the mineralisation of the water is more advanced when it springs from a deeper source—the dissolving and decomposing action of the water and of the carbonic acid increasing rapidly as the temperature of the ground and of the water-bearing stratum becomes more elevated.

Correspondence.

THE GAS QUESTION AT STRATFORD-UPON-AVON.

Sir,—In your valuable paper of the 3rd Inst I find the Copy of a letter from Mr. T. Barlow to the Gas Company of Stratford upon Avon with some other correspondence that took place between myself and the Mayor of that Town also with some very severe remarks from yourself. Now being convinced that no man ought to be more interested in investigating the truth than yourself, I trust you will give me an opportunity of refuting any imputation that may have been unjustly cast upon me in this matter, and if Mr. Barlow had made himself acquainted with the nature of this case he would most certainly have avoided the Public Press in a business of this kind.

I have very little respect for Parliamentary Stump-oratory or those who advocate it. For more than 20 years I have been actively engaged in the erection of Gas Works, and have been an eye-witness to the most reckless waste of Capital and disgraceful mismanagement. And I feel certain that more than one half the amount which ought to have been paid in Dividends in Country Gas Works, has either been absorbed by useless Secretaries, Drunken Stokers, or, wasted by the negligence of inattentive Directors.

With these facts before me how could I have written to the Mayor of Stratford on Avon in any other way than that I have done. Mr. Barlow in the first place informs the people of Stratford that I am creating a job for myself. I beg to inform him that I have already two or three jobs in hand, with as many more in negociation, therefore under that head he is very much mistaken. The advice I gave the Mayor, was prompt and decisive. To form an extra Gas Company in small towns may be an apparent evil to persons who believe in the system of Parliamentary Palaver, but I beg to say that such proceedings have been my only remedy to cure the evils above alluded to. It is a known fact that any Gas Company who refuses to attend to their duty exposes the Inhabitants to a very serious nuisance; how often has it occurred where a purifier has been neglected for 48 hours, that a pernicious and deadly poison of Sulphuretted Hydrogen has been distributed through the ramifications of Gas Pipes to the house of every Consumer, And I have known many instances where fatal consequences have ensued by such gross neglect. While the charges for this rubbish has been 40 per Cent. above the average price charged in Towns of the surrounding district.

Is it right then that such a state of things should be allowed to exist when the subject of Gas making is so simple and may be so easily understood?

I assure you Mr. Editor I have no wish to be engaged in the erection of opposition Gas Works, and when once requested by a respectable body of Gentlemen at Oxford several years ago to do so, I refused and did all I could to prevent it at a considerable cost to myself, when I found that the Oxford Company was prepared to do that which was right between the producer and Consumer. It is true I have been engaged in the erection of opposition Gas Works in three or four small towns in England, that however has only occurred where the Old Company refused to do what was right, It is also true that we caught a wild man in Chepstow who has been at Law with his fellow man for the last 20 years, acting in strict conjunction with his Lawyer availed himself of his advice (anxious to create a job for himself) (already possessing a monemania for destruction) sallied forth one night with half a dozen low scoundrels like himself and smashed our pipes in several places; this matter, of course set us thinking what was best to be done to tame the wild animal, and after a considerable to do we considered it advisable to stir up some of the old parliamentary crockery and in so doing discovered an Act, Passed and known as "Peels Bill" for the recovery of damages from persons in cases of wilfully and maliciously damaging property either of a private or public nature. This little clause succeeded, as the Magistrates took good care to inflict a penalty on every individual in each case, And for less than 20 minutes wilful destruction the cost exceeded £80; this may be useful to many persons whose bump of destruction has exceeded moderate dimensions.

In the next place Mr. Barlow goes on to say that I possess peculiar advantage in the Coal Market, but I beg to say in this matter he is mistaken, as I never had worse coals to make Gas from than I have had sent to these Works in Chepstow, while the average price has been 13s. 6d. per ton delivered in the Coal store, while the yield of Gas was very small and the illuminating power very deficient, so much so that I deemed it advisable to avail myself of some cannel Coal, which comes very expensive in this district*. I have tried Coals from several Pits in the South Wales Basin and have only found one kind yet that may be said to be a good average Gas making Coals.

Again Mr. Barlow attacks me on the ground of being connected in promoting a parliamentary bill for Chepstow. Now I beg to inform him that I had no more to do with this Bill than a man in the moon, neither do I believe it will ever confer one Iota of benefit either to the Shareholders or Consumers in this town, and I will defy Mr. Barlow to show me any advantage to be derived equal to the Interest of money paid for this reckless waste in securing the same.

In the next place Mr. B. says Parliament looks favorable on things of this kind; this I positively deny, and if any Gas Company will look back to the enormous expence they have been exposed to in obtaining Gas Bills they will bear me out in these assertions.

Gas Bills may be capable of confering an advantage to promoters, and an imaginary, monopoly by Public Companies, but I totally deny their having power to confer any benefit on the Inhabitants of small towns in the supply of Coal Gas The Carbonization of Coals and its management is a Chemical and Scientific arrangement and I contend there is nothing whatever in this matter but might have been attained by a Public and General Bill such as have already been passed for the protection of other public property in these realms.

It has fallen to my lot to have been one of the world's workers and having taken deep interest in making myself acquainted with the laws that govern Terrestrial Physics of our Globe. I have therefore no desire to be at war with my fellow men but if Coal Smoke must do penance before the Big-wigs of Westminster, be it so. I am looking for other men and other times when steam and electricity backed by the true combustion of Coal Smoke will secure for itself a position that will supersede National Palaver and Parliamentary Stump-oratory, Our Globe Sir is a compound of solids and fluids and if we have arrived at the Gassy Period without understanding it the matter rests with ourselves, but be assured that the consequences of neglect in this matter will carry its own rod of retribution.

The calamity that has recently occured in South Wales, And more recently near Barnsley ought to instruct us that we are dealing with an agent possessing powers we do not comprehend. It is therefore highly essential that men who have derived so much advantage from the Carbonisation of Coals and the distribution of Coal Smoke, should turn their attention to this matter and whatever spare time or means they may have at their disposal there is ample scope for their employment in this question; one thing is certain that wherever Gas works are erected upon simple principles and conducted with due economy Gas may be sold to the public at 5s. per 1000 cubic feet or even less where the population exceeds 3000 and coals not more than 20s. per ton delivered at the works. As Several of our quarterly meetings will take place in April next, I shall be able to furnish you with such occular demonstrations that will leave no mistake on this subject as far as regards my calculation in producing practical results, as I have always felt it incumbent on myself wherever I have erected Gas Works to take an interest in the Works paying a fair dividend to the Shareholders, and furnishing Gas of a pure quality, at a moderate price, and having furnished each Company with a special set of rules in a printed form easily understood by the Clerk and workmen where these have been attended to the success has been certain, but where they have been neglected the result has recoiled upon the shoulders of the Directors and Shareholders operating, like every other known law in the universe when unattended to. With these remarks I beg to close this letter and regret that circumstances should require such a demonstration of facts but when misunderstanding has occured involving Men's Integrity and Character, I consider it important that they should have a fair opportunity of placing themselves right in the eyes of the public.

Belle Vue House Chepstow THOS. ATKINS.
March 9th, 1857.

* The manager of an important gas-work in the vicinity informs us that "the best coal for the manufacture of gas to be had from the Dean Forest, can be delivered in Chepstow at about 10s. to 10s. 6d. per ton; inferior qualities may be obtained at 2s. to 2s. 6d. less. The Forest coal will yield, under fair treatment, upwards of 9000 per ton of 10 candle quality."—ED. J. G. L.

THE DEWSBURY WATER SUPPLY.

SIR,—In reading the leading article in your valuable paper of the 3rd instant, it appeared to me that you were under the impression that the Dewsbury Report referred to was *published by me*. Now, as I am not in the habit of publishing my reports, considering them the property of the parties employing me to make them, I beg to say that the report in question was *not* published by me, but, I presume, by the authority of the Dewsbury, &c., Local Boards, as one was forwarded to me by the clerk of the Dewsbury Local Board, informing me that I could get more, if I wished, from the publisher, Mr. Joseph Ward, top of Church Street, Dewsbury, at 3d. each. I trust you will excuse my noticing this fact, and will not consider that I am intruding myself upon your attention unnecessarily, or interfering in any way with your editorial comments—upon which I do not feel myself called upon to remark, not that I attach slight importance to anything emanating from your pen, but that I consider, in my position, I have no authority to comment upon that which belongs to my employers, the Local Boards, unless called upon by the boards expressly to do so.

THOS. WICKSTEED, Civil Engineer.
40, *Coleman Street, E.C., March 5*, 1857.

SIR,—We have noticed a paragraph in your paper of the 3rd inst. relating to Mr. Wicksteed's report upon the Dewsbury Water-Works, from which it appears that you were not aware that the report had been answered by us: we therefore beg to forward our reply, hoping that, in justice to us as engineers to the scheme, you will insert some more favourable notice of it in the next impression of your paper, a copy of which we will feel obliged by your forwarding.

MORGAN AND HORN.

Huddersfield, March 11, 1857.

Register of New Patents.

1960.—WILLIAM PATTEN, of 22, Old Fish Street, London, for "*An improvement in apparatus for supplying water to the basins of water-closets, and other vessels.*" Provisional protection only obtained. Dated Aug. 22, 1856.

This invention has for its object an improvement in apparatus for supplying water to the basins of water-closets and other vessels, for which purpose the supply-pipe has applied to it a chamber or valve-box, which is divided by a partition, in which is a passage covered by a valve, the stem of which passes through a suitable stuffing-box; the other part of this chamber or valve-box is connected with the basin of a water-closet or other vessel. It is preferred that the valve-box or chamber should be in two parts with flanges screwed together.

1969.—WILLIAM RACSTER, of 28, Francis Street, Woolwich, for "*Improvements in apparatus for regulating the supply of gas.*" Patent dated Aug. 23, 1856.

[Drawings are required for the elucidation of the manner in which this invention is carried out.]

The claim is for—

The employment of two floats, each of which works upon its own spindles, in separate chambers, which floats have wires or bent pieces of metal attached to them and are by them prevented from separating beyond a certain distance, and which offer no hindrance to the floats sinking a certain distance.

Also, as applied to gas-governors, as shown in figs. 4 and 5, the employment of a valve-seat attached to a tube passing through a float in combination with a valve, moveable either by a tap, a winch, or a screw. The patentee does not claim the employment of the valve-seat attached to a tube passing through a float, but the combination as described above.

1996.—JOHN MOORE, of Aston near Birmingham, and WILLIAM MOORE, of the same place, for "*A new or improved tap or stop-cock.*" Provisional protection only obtained. Dated Aug. 27, 1856.

The body of the improved tap consists of a hollow cylinder, at or near the middle of which is a conical valve-bed or seat; a conical valve rests upon the said bed or seat, and a stem or spindle, from the underside of the said valve, passes through the bottom of the barrel. A bottom or thumb-plate is fixed on the lower end of the said stem or spindle. A coiled spring is placed between the valve and the top of the barrel of the tap. The water or other fluid is delivered on the upper side of the valve, and by its pressure tends to keep the said valve close to its bed or seat. On pressing up the button at the bottom of the barrel the valve is raised, and the water or other fluid passing down the barrel escapes by a pipe at the lower part of the said barrel. When the pressure is removed from the button, the valve closes by the combined action of its own weight, the elasticity of the spring, and the pressure of the liquid or fluid. In place of the stem or spindle described for raising the valve, a screw may be employed, by turning which the valve may be raised or lowered. The tap or stop-cock may be used in an inverted position with the same effect.

2009.—JEAN BAPTISTE FEAUVEAU and LOUIS ALEXANDRE LEGRAND, both of Brussels, for "*An improved apparatus for the purification and the combustion of gas.*" Patent dated Aug. 28, 1856.

[This invention is identical with that well known as the "Billows' burner," with this exception, that in this case a small perforated disc is inserted into that part of the tube where the two nipples join.]

The claim is for the use and adaptation of burners placed in the juxtaposition hereinbefore described, and also the use and adaptation of the purifying and regulating-plate or grating, whether used in conjunction with the before-described peculiar arrangement of burners or not.

2033.—LAZARUS SIMON MAGNUS, of 3, Adelaide Chambers, in the City of London, for "*Improvements in the manufacture of coke.*" Patent dated Sept. 1, 1856.

This invention consists in the crushing and grinding of different varieties of coals and mixing them together in the proportion of about two-thirds bituminous coal and about one-third of steam anthracite or other dry coal, of which the carbon is the preponderating element.

The claim is for, not the mere mixing of different varieties of coal for the purpose of making coke, as the same may have been previously accidentally performed, but for the process of crushing or grinding and mixing varieties of coal of different chemical constitutions, as above described, for the purpose of producing a hard and compact coke of superior heating power.

2047.—JOHN ROBERTS, of Upnor, in the co. of Kent, Terra Cotta manufacturer, for "*An improvement in the stopping or closing of jars, bottles, and other vessels, applicable also to the joining of earthenware and other pipes.*" Provisional protection only obtained. Dated Sept. 3, 1856.

The object of this invention is to simplify and render more secure the junction of pipes, whether made of earthenware or metal, and also the stoppering of bottles and the covering of jars and other vessels. For this purpose the yielding or elastic properties of cork, india-rubber, or other analagous substance is made available, and into the band of this material, which surrounds the lip of the vessel to be closed or the pipe to be lengthened by a junction, the thread of a screw is caused to take, and thus is obtained an air and water-tight joint. The ring of yielding material is fitted into an annular groove formed in the neck of the jar or vessel or end of the pipe, and in the cover of the jar or socket-end of the adjoining pipe is formed a female screw by moulding or casting the same at the time of making the pipe or cover. When the thread in the socket-end of the pipe or cover is applied to the elastic ring it will take into the cork, leather or other substance, and hold firmly thereto. In the case of stoppering bottles, it is proposed in general to form the screw in the bottle-neck, and to make the stopper the yielding medium for obtaining an air-tight stoppering.

By the application of this invention vessels for containing acids and other substances that would injure (by contact) a vegetable or fibrous packing, may have such a packing applied thereto, as the cork, leather, or india-rubber will not necessarily come in contact with the contents of the jars or bottles.

2058.—GEORGE ANDERSON, of Queen's Road, Dalston, in the co. of Middlesex, gas engineer, for "*Improvements in the combustion of tar and other similar matters in heating gas retorts, and in the consumption of smoke arising therefrom, and from other fuels used therewith.*" Patent dated Sept. 4, 1856.

These improvements consist in the combustion of tar and oleaginous and bituminous matters in heating gas retorts, and in the consumption of smoke is as follows:—

The tar or oleaginous or bituminous matters are allowed to fall in small streams on and trickle down an inclined heated plate which forms the furnace of a retort-heating chamber. The greater part of these matters are converted into gas during the passage over the heated plate. The residue or part that remains unconsumed falls from the lower end of the plate in the form of breeze, or a kind of cinder, into what may be termed the ash-pit, which is the place below the inclined plate. This chamber is kept nearly full of this material, which remains in a red-hot state. An air-passage is maintained over this red-hot breeze, and immediately beneath the inclined plate. The in-draught of air thus permitted becomes highly heated, and passes up through the space at the back end of the inclined plate, and there mixes with the gases evolved from the tar or other matters, which gases are for the most part consumed in the retort-heating chamber.

Another retort-chamber and furnace of the ordinary kind is employed, which is heated by the combustion of coke; from this retort-chamber is conveyed the unconsumed gases and surplus heat into a third retort-chamber, placed between the other two, into which also unconsumed products from the tar furnace are conveyed.

The combination and commingling of the products of combustion from the two furnaces produce further combustion in the third furnace, whereby the smoke and offensive gases generated by the combustion of the tar or other matters are entirely or for the most part consumed; this combustion in the third furnace may or may not be accompanied by a further admixture of air.

Instead of using these separate retort-chambers or furnaces one furnace or chamber, if divided so as to form the tar and coke fires with a separate combining and common chamber, will answer the purposes required.

The claim is for the arrangement and combination of furnace or fire-place for the combustion of tar or other oleaginous or bituminous matters with a furnace or fire-place; burning coke or other suitable fuel, either in the same or in separate retort-chambers; for heating gas-retorts hereinbefore described.

2087.—FELIX ESTIVANT, in the name of the Society Estivant Brothers, of Paris, and of 45, Essex Street, Strand, for "*Improvements in casting metallic tubes.*" Patent dated Sept. 8, 1857.

This invention consists in forming a casting mould of metal of varied dimensions with a core of sheet-iron or other metal filled with sand, for casting tubes and printing-cylinders.

The claim is for the application of this system in a casting mould of metal of varied dimensions, with a core of sheet-iron or other metal filled with sand, for the purpose herein mentioned; for casting tubes and printing-cylinders, whatever may be their dimensions, or the metal of which they are made, and which allows tubes of pure copper to be made without soldering, of any length or thickness, perfectly sound; and also to make printing-cylinders of pure or alloyed copper by a process entirely new.

2115.—STEPHEN WHITE, of Newlands Street, Everton, Liverpool, gentleman, for "*An improved method and apparatus for the distillation of certain oils or oily substances from the petroleum commonly called 'earth oil,' found in certain districts in the Birman Empire, and an improved method of purifying the oils or oily substances so obtained.*" Patent dated Sept. 10, 1856.

The claim is for the process or method which has been described of distilling and re-distilling the petroleum or earth oil, hereinbefore referred to, and its products, by means of an apparatus composed of several boilers or stills acting in combination so as to produce and afterwards to re-distil the three substances hereinbefore described as eupion, eupion oil, and paraffine, by one continuous operation. The use of an apparatus composed of several boilers or stills so acting in combination, in the manner hereinbefore described. The particular order or series of purifying processes which has been particularly described, and, as applied to those processes, the use of common salt and neutral chromate of potash with sulphuric acid in combination, and proto-sulphate of iron or green vitriol, and carbonate of soda or carbonate of potash in combination. The patentee does not claim the distillation of the earth oil simply, nor the use of boilers or stills used separately, nor the use of any of the chemical agents described or referred to in reference to such processes used separately, but only common salt, neutral chromate of potash and sulphuric acid combined, and proto-sulphate of iron or green vitriol and carbonate of soda, or carbonate of potash combined, nor, save as aforesaid, does he claim any of the matters or things before described.

PROVISIONAL PROTECTION

HAS BEEN GRANTED FOR THE UNDERMENTIONED PATENTS.

241.—DAVID YOOLOW STEWART, of Glasgow, in the co. of Lanark, N.B., ironfounder, for "*Improvements in moulding or manufacturing cast-iron pipes.*" Feb. 12, 1857.

452.—JOSEPH QUICK, Jun., and ALEXANDER FRASER, both of Sumner Street, Southwark, for "*Improvements in apparatus for regulating the drawing off and the supply of water and other fluids.*" Feb. 16, 1857.

474.—ROBERT BEST, of Birmingham, manufacturer, for "*An improvement or improvements in illumination.*" Feb. 18, 1857.

521.—William Footman, of 24, Rodney Street, Pentonville, London, for "*Further utilizing the illuminating properties of gas, by improvements in burners and shades or reflectors.*" Feb. 23, 1857.

571.—Walter Macfarlane, of Glasgow, N.B., engineer, for "*Improvements in moulding or manufacturing cast-iron pipes.*" Feb. 26, 1857.

621.—George Danré, engineer, Pierre Fortune Victor Mouillard, gentleman, and Pierre Adrien Mercier, gentleman, of Paris, for "*An improved method of, and apparatus for heating by gas.*" March 3, 1857.

NOTICES HAVE BEEN GIVEN OF INTENTION TO PROCEED WITH THE UNDERMENTIONED PATENTS.

2488.—John Macdonald, of 13, Henry Street, Upper Kennington Lane, Vauxhall, London, machinist, for "*Improvements in regulating the supply of oil or other liquids applicable to lamps, gas-meters, and other useful purposes.*" Oct. 23, 1856.

2511.—George Henry Backhoffner, of Upper Montague Street, London, doctor of physics, for "*Improvements in glass shades for gas and other artificial lights.*" Oct. 25, 1856.

2580.—Eugène Napoléon Cadet, of 36, Rue Folie Méricourt, Paris, manufacturer, for "*Improvements in the construction of cocks and taps.*" Nov. 3, 1856.

186.—Henry Medlock, of 20, Great Marlborough Street, Westminster, analytical chemist, for "*An improved method of purifying water.*" Jan. 21, 1857.

241.—David Yoolow Stewart, of Glasgow, N.B., ironfounder, for "*Improvements in moulding or manufacturing cast-iron pipes.*" Jan. 27, 1857.

Legal Intelligence.

MARLBOROUGH STREET POLICE OFFICE.

Saturday, March 14.

(Before Mr. Bingham.)

CHARGE OF GAS STEALING.

A charge of a serious and extraordinary character was to-day preferred at the instance of the Imperial Gas Company, against Mr. *Henry Tilbury*, brassfounder, finisher, and gasfitter, &c., in an extensive way of business, at 54, Upper Marylebone Street, St. Marylebone. The charge, which was that of "gas stealing," excited considerable interest, in consequence of the respectable position the accused held as a tradesman, and the number of hands in his employ; the court was crowded by his friends and workpeople.

Mr. Cooper, barrister, and Mr. Willoughby, of the firm of Willoughby, Cox, and Willoughby, attended on behalf of the company; and the accused was also represented by counsel.

It appeared that the accused carried on his business at the premises, 54, Great Marylebone Street, in the rear of which he had extensive workshops. On the 28th of February, from information received, Mr. Hersey, the superintendent, and the company's inspectors, were induced to make a visit to the prisoner's premises, as he burnt the company's gas by meter, and there was strong ground for believing that the vast amount of gas consumed by him was not registered by the meter. On inspection they discovered a pipe connected with the main of the company, before reaching the meter, carefully passed through and concealed in the wall, passing through the house and into the workshops, by which no less than 30 lights and 6 melting-stoves of various descriptions were supplied with gas, consuming an enormous quantity. The pipe was passed between the ceiling and the walls of the workshop in a very clever manner. The prisoner was present when the inspectors paid their visit, and on being informed of their suspicion, he at first denied it, but subsequently confessed that he had committed the wrong, and that he had been using the pipe and burning the gas surreptitiously for a period of two or three years. The company had, however, traced out parties who were concerned in putting the pipe up, and were in a position to prove that they had been robbed in this manner for a period of something like five years, to the extent, at the lowest estimate, of 1000 cubic feet of gas per day. When discovered, the accused exclaimed that he was a ruined man, and should become the inmate of a prison, and his wife of a madhouse, where she had previously been.

Mr. Cooper said the company had no desire to press the case harshly against the prisoner, but in consequence of the continually increasing number of robberies committed upon their property by tradesmen even in large and respectable ways of business, they had determined, instead of proceeding for money penalties, to proceed by common law for the felonies of stealing their gas. Although in this instance they could prove their loss to be to the extent of many hundreds of thousands of cubic feet of gas, they had only proceeded against the prisoner on a charge of stealing 1000 cubic feet of gas, namely, on the day when the misappropriation was detected.

The prisoner, who appeared deeply humiliated and affected at his position, pleaded guilty, and threw himself upon the mercy of the company and the court; and, in answer to a question from the magistrate, implored that he would deal with the case, and not send him for trial. He was already a ruined man.

Mr. Bingham said he thought the company had, considering the enormous character of the depredation, dealt most leniently with the accused. Taking the circumstances into consideration, notwithstanding the respectable position the defendant might have previously held as a tradesman, he should not be discharging his duty to the public unless he inflicted upon him some punishment for an offence which he must say was of a very serious character. He therefore sentenced him to two months' imprisonment.

The prisoner bowed to the decision of the magistrate, and a most extraordinary scene presented itself; nearly all the persons in the court, chiefly his workpeople, rushing forward to shake hands with him on his removal from the dock to the cell, prior to being removed to prison.

A similar charge against a licensed victualler in Marylebone, in an extensive way of business, has been opened, and stands remanded at Marylebone Police Court.

Miscellaneous News.

INSTITUTION OF CIVIL ENGINEERS.

March 3, 1857.

I. K. Brunel, Esq., Vice-President, in the Chair.

The paper read was "On the Results of the Use of Clay Retorts for Gas-Making," by Mr. Jabez Church, Assoc. Inst. C.E.

The substitution of fire-clay for metal, in the construction of retorts, was attributed to Mr. Grafton, and dated back as far as the year 1820. Originally they were square in transverse section, but that form was soon changed for the D, or oven-shape, which had been since adhered to, both in this country and abroad; this latter form of retort admitting of a stratum of coal being distributed of an equal thickness throughout.

The comparative quantities of gas made by iron and clay retorts, of the D form, of 15 inches by 13 inches in section, and 7 feet 6 inches in length, had been found by the author to be as follows:—

The iron retorts lasting 365 days, and working off 1½ cwt. of coal for each charge, effected the carbonisation of 2190 cwts. of coal, which, at 9000 cubic feet of gas per ton, gave a total quantity of 985,500 cubic feet of gas per retort; whilst the clay retorts lasted 912 days, carbonised 5472 cwt. of coal, which, at 9000 cubic feet of gas per ton, gave 2,462,400 cubic feet of gas per retort. It would thus be seen that the clay retorts yielded a greater quantity of gas, from the same weight of coal, than the iron retorts, but the specific gravity of the gas so made was less, and its illuminating power was diminished, in consequence of the increased temperature of the clay retorts, which caused the last portion of the gas to be decomposed.

The most practical method of working clay retorts in large works was with the addition of an exhauster. This reduced the pressure on the retort, and prevented the escape of gas through the pores and fissures; and by that system the quantity made was increased about 200 cubic feet per ton of coal. In small works, the expense of an exhausting apparatus, and steam machinery to work it, would not be compensated by the gas saved. In such cases, therefore, it was necessary to work at as low a pressure as possible; and it had been found that a water gauge pressure of 7 inches was the most profitable. The deposition of carbon from the decomposition of gas at a high temperature was more abundant in clay than in iron retorts, and it had been determined, experimentally, that its amount was also influenced by the particular kind of clay used, as well as by the smoothness or roughness of the interior surface of the retorts, the deposition being greatest in the latter case. The principal portion of carbon appeared to separate from the gas at the earlier period of working the charge of coal, and ceased to be separated towards the latter part of the time; so that every time the retorts were charged and worked, there was a distinct layer of carbon thus formed, and eventually this accumulation became so great that it required to be removed. The removal of this carbonaceous incrustation, on account of the fragile nature of the clay retorts, required to be conducted very carefully. In the ordinary way atmospheric air was introduced into the retort for from nine to thirty hours, and then the carbon was detached by means of chisel-ended bars. The author had tried the plan of inserting an earthenware pipe through an orifice in the lower part of one of the lids, the inclination of the pipe being changed, so as to allow the air entering through it to impinge successively on every part of the carbonaceous mass; being, at the same time, a temporary connection made between the ascending pipe leading to the hydraulic main and the main flue of the retort stack leading to the chimney shaft. By this method only half the time was needed for the removal of the carbonaceous incrustation.

With respect to the quantity of fuel required for carbonising the coal, it had been found, that with short retorts, the results were about the same, whether clay or iron retorts were used. In ordinary working, about 25 to 30 per cent. on the quantity of coke made was consumed, assuming that Newcastle coal was used, and that a chaldron of coke was produced by each ton of coal. With clay retorts of 20 feet in length a saving of fuel was effected.

In conclusion, the author stated that the cost of clay retorts was about 50 per cent. less than that of iron retorts, and that there was a saving of about 20 per cent. in the setting, whilst their durability in work was two and a half times greater, the former lasting two and a half years, and the latter only one year.

In the discussion, the general results given in the paper, were confirmed; it was, however, stated that the quantities of gas obtained from iron and from clay retorts must be in proportion to the qualities of the coal used. In some places where 7600 cubic feet of gas had been produced by iron retorts, as much as 9200 cubic feet had been made in clay retorts; and the produce had even been as high as 11,000 cubic feet per ton of coal.

In general there was an increased yield of about 2000 cubic feet per ton when using clay retorts. It was probable that the power of the clay for retaining heat had some influence on the quantity of gas produced.

It had been observed that, instead of following the usual law, the leakage of gas through the pores or fissures of the clay retorts was exactly as the pressure, instead of as the square of the pressure.

The circumstances under which the bi-sulphuret of carbon was evolved were treated of at some length, and it was shown, that even the method now adopted, of leaving in the gas a small portion of ammonia, was not entirely effectual in removing the prejudicial effect of the bi-sulphuret of carbon which was so severely felt in the rooms where gas was burned.

It was stated that the carbonaceous deposit in the retorts could be more speedily removed by the use of a small quantity of salt thrown in when in a heated state. It was very important that the interior surface should be as smooth as possible to reduce the tendency to deposit, which was believed to proceed from the tar produced in the process of destructive distillation of the coal, rather than from the gas. The use of clay retorts was admitted to be now almost universal, except in very small gas-works, and that the economy they induced was even greater than had been stated in the paper.

At the meeting of March 10, R. Stephenson, Esq., M.P., president, in the chair, the discussion was continued.

With reference to the discussion at the previous meeting, it was remarked that the merits of iron retorts had scarcely been fairly stated, as, in some instances, quite as much gas had been made by the latter as by the former; unless in cases of peculiar qualities of coal being used, and that the iron retorts had been in constant work for two years and a half.

It was stated that the course the discussion had taken might lead to fallacious conclusions; for, although clay retorts, when well set and carefully managed, might endure twice or thrice as long as iron retorts, and the materials of these retorts, and also of their settings, were cheaper than those of iron retorts, yet on the other side of the account must be placed several important items of charge, which, under certain circumstances, would turn the balance in favour of iron retorts; in certain other circumstances render it matter of indifference which description of retort was used; and in a third state of circumstances, prove that clay retorts ought to be preferred. If, for instance, the following practical case was assumed:—Let the cost of an iron retort mounted for use be £10, and of a similar clay retort mounted for use be £7. Let the durability of the latter be two and a half times that of the former, and let the quantities of gas made in each be respectively 900,000 cubic feet and 2,250,000 cubic feet prior to final destruction. Granted, also, that the sale price of coke was 15s. per ton, the consumption by iron retorts three-tenths of the quantity made, and by clay retorts four-tenths of the quantity made, and let it be admitted that one ton of coal carbonised would produce two-thirds of a ton of coke—then the amount for equal productions of gas would stand thus:—

	Iron Retorts.		Clay Retorts.	
1. Materials and setting	£10 × 2½ = £25	0 0	£7	0 0
2. Extra repairs of furnaces, &c...	—		1	10 0
3. Expenses of exhauster, &c.	—		1	5 0
4. Blowing-out apparatus, &c.	—		0	5 0
5. Coke used in furnace..	37 10 0		50	0 0
Total	£62 10 0		£60	0 0

Showing that when coke would sell at 15s. per ton, and the other circumstances were as stated, iron retorts and clay retorts were of very nearly equal value. If coke was dearer, iron retorts were to be preferred, and if it was cheaper clay retorts should be preferred.

Coals, however, varied much in quality, and so did the quantity and quality of the coke produced; and hence the gas engineer must in every case be governed by the particular circumstances with which he had to deal.

Clay retorts were well adapted for generating gas from the Scotch cannel coal, which produced coke of no appreciable value; but it might be doubted whether they were in useful effect equal to iron retorts for the distillation of coals containing or yielding a large quantity of liquid matter, as, for instance, with coals which yielded 350 lbs. per ton of ammoniacal liquor, instead of the very usual quantity of 100 pounds. Nor were they to be commended for small works, using a coal producing valuable coke, for in such works an exhauster could not be applied; neither was the management and employment of the retorts so careful as in larger establishments, conducted under intelligent and experienced supervision. An error had been committed by some speakers in supposing that clay retorts could be worked at a pressure of 7 inches of water with more advantage than at lower pressures. Clay being a porous material allowed the gas to transpire through its capillary passages, and hence it was better to work under a low pressure. Neither was it ordinarily correct to say that clay retorts would produce more gas than iron retorts, or gas of better quality. In fact, clay retorts would not evolve more, nor indeed so much gas as iron retorts, if they were not, by the expenditure of a much larger quantity of fuel, sometimes worked at a much higher temperature than would be prudent with iron retorts. In many such cases, however, the additional quantity was obtained, not only at the expense of the illuminating power, but also at the expense of purity.

Much had been said with respect to the supposed anomaly of the law of leakage, through the substance of clay retorts—the quantity being found by experiment to be as the pressure, rather than as the square root of the pressure. This, however, was no real anomaly, for the law of the transmission of fluids through tubes was well known to be represented by the formula

$$P = av^2 + bv$$

in which P represented the pressure, v the velocity, and a and b two experimental co-efficients. Now when the motion was minutely slow, as it always was through capillary tubes and porous substances, v^2 became indefinitely small in respect of v, and consequently

$$v = P$$

or, in other words, the quantity lost was as the pressure placed upon the retort. The same law obtained in the leakage of gas from mains, and hence, by mere observation, it was discoverable whether the loss was from a broken pipe, or from capillary apertures; because in the former case the loss under a given head P would be as $\sqrt{P}$, while in the latter case it would be as P simply.

In respect to the greater deposition of carbon in clay retorts, it was believed that this arose in a considerable degree from the decomposition of the gas transpiring through the substance of the retort; this gas parting with its carbon while entering the highly-heated pores, which carbon then became left on the inner surface of the retort.

THE UNITED GENERAL GAS COMPANY.

The Ordinary Half-yearly Meeting of this Company was held on Tuesday, March 10, at the offices of the company, Austin Friars—J. O. HANSON, Esq., chairman of the company, presiding.

The SECRETARY (D. W. Ogg, Esq.) read the notice convening the meeting, and also the following report of the directors:—

Gentlemen,—This half-yearly general meeting has been convened in compliance with the company's charter, and, in laying before the proprietors a report of the last half year's operations, we have to state that the profits are £9984, being £3098 more than in the corresponding period of 1855, and £1915 more than the profits to last June.

At Dublin, the business of the company shows a steady increase. Certain districts will require extension of mains this summer, and the removal of smaller mains, to be replaced with larger, to afford a better supply of gas.

The district of Kingstown will also require a considerable outlay to meet the increasing demand for gas.

Besides these undertakings for increased distribution, your directors propose forthwith to construct an additional gasholder at the Dublin station.

At Cork, the general improvements of the works, including the erection of a new retort-house, coal-store, exhauster, and steam-engine, are completed.

We have to report that the corporation of Cork rejected our tender for supplying the public lights after the 1st of January, 1858, and accepted that of a local company now in the course of formation in that city. We must, therefore, be prepared to encounter opposition.

Your directors are happy to say the works are in excellent condition, and fully equal to supply the entire city.

We have already reduced the price of gas to private consumers, as intimated at the last meeting. We have likewise applied to Parliament for a bill for more effectually protecting the interests of the company at that station.

At Limerick, the business continues to show a gradual improvement, particularly since the public lighting was undertaken by the corporation. There are several extensions for private lighting to be provided for this summer, which will cause a moderate expenditure.

Taking into consideration the outlay that must be incurred, and the enlargement of mains and erection of new gasholder at Dublin, together with important additions at Kingstown, and bearing in mind the reduction of price at Cork, your directors feel they should not be justified in recommending a larger increase on the former dividend than 1s. 6d. per share.

Your directors recommend the proprietors to declare a dividend out of the profits of the past half year at 17s. 6d. per share, free of income-tax, and the balance to be transferred to the stations' contingency account as heretofore.

The CHAIRMAN then said: Gentlemen, before I advert more particularly to that part of our report which is, perhaps, the most interesting—in reference to Cork—I will just direct your attention to two or three items in the accounts, and express my satisfaction, and, I have no doubt, that of those proprietors who have taken the trouble to look at the accounts, at finding that they are in a very satisfactory state. The progress we have made is considerable; and, notwithstanding the consumption of coals has decreased this half year, the rental has increased £1500. There is a very considerable saving also in the wear and tear. Those are the principal features in the accounts; and, as the report states, the result is that it has left us £3098 surplus over and above the corresponding period of 1855; and out of that we propose to pay you a dividend of 17s. 6d. per share, which is an increase of 1s. 6d. upon the last dividend. (Hear.) Now I come to Cork. You may naturally expect that I should state exactly our position. Our connection at Cork is of a very long standing. We went there in the year 1825, and we have supplied the city of Cork, I believe, without any dissatisfaction on the part of the inhabitants, under two contracts, the second of which is now running out, and has continued for something like thirteen years. The first three years of this contract we were to have 8s. for the private lights, and 7s. 6d. for the last ten years, also for the private lights. The public lamps were taken at £3. 15s. per lamp. After the first three years, we voluntarily reduced the price of gas from 7s. 6d., which we might have charged, to 7s. In three years after, we reduced the price voluntarily from 7s. 6d., which was the contract price, to 6s. In the year 1854, for a short period, when we all know coals were extremely dear, and freights enormously high—£17 per keel—we raised the price temporarily to 6s. 8d.—still under the contract price; and now the price at Cork has been reduced to 5s. 6d. Under these circumstances, we should have thought that we might have expected a little kindness and consideration from the corporation for not exacting our full contract price. In all large corporations there are restless spirits, and some of these seem to have fancied that our prices were extremely high, and that we were monopolists and extortioners. They have complained also of the quality of the gas; but it is rather strange that all this should only have been found out at so recent a period. By our contract, the corporation had the power, if they thought fit, to renew the contract with us, their old friends, who had supplied them thirty years; and another very important clause was introduced into the contract, which is, that they had power, if they thought fit, and wanted to light Cork for themselves, to call upon us at the end of our contract to give up the lighting of Cork, and to take our works off our hands at a fair valuation, to be made by two competent and indifferent parties. Now, the corporation have not availed themselves of that; they have not entered into any fresh terms with us; and I do think it would have been a more straightforward course if they had told us—"Now, gentlemen, we wish to light Cork for ourselves; you have treated us very well for a great many years; but, at the same time, we think it right to light the city of Cork ourselves." That would have been a straightforward and manly course, and we should not perhaps have had much reason to complain of them. But what have the corporation since done? They have encouraged parties in Cork, headed by some of their own members, I am sorry to say, who complain of the quality of the gas. I believe our works in Cork were never in a better or more efficient state than they are at the present moment—(hear, hear, hear)—although they assert that our works are worn out, and that our mains are defective. They have told us also that the leakage is very excessive, being 30 per cent. This is about as true as many of their other assertions. It is nothing approaching to that, although our mains are travelling over a space of between 40 and 50 miles. And now these gentlemen have been trying to establish a company themselves, headed by Alderman M'Guire. Taking into consideration all these circumstances, we have a fair claim for going to Parliament for the better protection of our property there. (Hear, hear.) We have invested a considerable sum of money at Cork; and for the better protection of that property we have thought fit to go before a committee of the House of Commons. (Hear, hear.) And when that committee of the House know that the consumption of gas at Cork does not exceed between 50,000,000 and 60,000,000 cubic feet per annum; that the rental at Cork, both for public and private lighting, is not more than £15,000 a year, and which we are quite ready to prove in evidence, and that the return for our money at Cork has not produced more than a reasonable profit for the investment, I think a committee of the House of Commons will be sure to see how detrimental a struggle of this nature will be likely to prove both to the interests of shareholders, and eventually to the inhabitants of Cork. (Applause.) These are the leading facts that I have to mention to you, gentlemen, in reference to Cork. I am happy to say we never were in a better situation; and if opposition is forced upon us, we are prepared to meet it. Our funds were never in a more efficient state; for, according to our balance-sheet, we have at the present moment no less a sum than £25,000 in available assets. (Hear, hear.) I do not know that there is any other matter of importance that I need mention with reference to the report; but I must tell you one strong fact that I had overlooked. The Corporation of Cork, wishing to favour this agitation that has been going on, after this new company, which is quite in its embryo state, thought themselves sufficiently strong to make an impression at Cork, advertised for tenders for the purpose of lighting; and although our tender was the lowest, they have accepted the tender of this new company, which is, as I say, completely in its embryo state. (Sensation.) The price we tendered for was £3. 10s. for the public lights, and the private lights for three years at 5s. per 1000. Well, these other gentlemen sent in their tender at £3. 15s. for the public lights, and 5s. 6d. for the private lights for three years. Notwithstanding that we had been in possession of the lighting of Cork for so many years, our tender was rejected, and the tender from their own party of the corporation was accepted. We think, therefore, that we have very strong grounds for going to Parliament, and for asking for the better protection of our property there. I think it right to mention these facts, because I am of opinion it shows that we have been extremely ill-treated at Cork. (Applause.)

Mr. HALLETT: What is the object of our bill?

The CHAIRMAN: For the better protection of your property. We went into Cork at the invitation, I believe, of the Wide Street Commissioners, for lighting the city. The powers of the Wide Street Commissioners were transferred afterwards to the corporation; and the corporation have power to authorise parties to open or close mains, and, if they wish to favour any other company to our exclusion, they may, perhaps, cause us some difficulty in carrying on our lighting.

Mr. BLACKETT: I think, sir, we cannot receive this report without expressing our satisfaction at the contents of it. (Hear, hear.) There is "something looming in the distance" not very acceptable; but let us not forget that we are indebted for the improved state of our accounts, and for the prospect of a larger dividend, to the energy and ability of the gentlemen who conduct our affairs. (Hear, hear.) Some of those gentlemen, I believe, when they came in, found this concern not in a very good state; but now, I think, we are in as flourishing a condition as any other gas company in the kingdom. (Hear, hear.) We are very glad to get the 1s. 6d. increase of dividend; but we should have liked a little more. (A laugh.) I am quite sure the directors would have given it us if they could; but if they have got a little black weather before them, we must not cripple them in funds, but let them have a fair opportunity for watching over our interests. (Hear, hear.) I have, therefore, much pleasure in moving that the report and accounts be received and adopted.

Mr. VANDEWALL: I think it should not go before the public that we are receiving anything in the shape of a large dividend as regards the original shareholders, because, although we have an increased dividend, £1. 15s. a year for £50 is by no means a very large dividend; and I think it is no very great matter for the Cork gentlemen to fight about. (Hear, hear.) I will cordially second the motion for the adoption of the report and accounts.

The resolution passed unanimously.

Mr. RHODES: I should like, sir, to know how long the dividends which are stated to be unclaimed in the accounts have remained so.

The CHAIRMAN: Some of the dividend checks have been cancelled at various times from the commencement, though ready to be paid on application from the proprietors. The amounts are brought forward in the accounts, and spread over a number of years.

Mr. GODFREY: I move, sir, that a dividend at the rate of 17s. 6d. per share, free of income-tax, for the past half year be now declared, and, in doing so, I cannot but congratulate the proprietors on the improved state of their affairs generally; and I sincerely hope and trust that by judicious management the opposition now threatening us may not be ultimately detrimental to the interests of the company.

Mr. WOOD inquired whether it was intended to reduce the price at Dublin?

The CHAIRMAN stated that the company had not held out any promise to do so, but probably some moderate reduction might ultimately be made.

Mr. RHODES asked what was the course of proceeding with reference to transfers—whether the transfer was signed by a certain number of directors, the secretary, or the registrar?

The SECRETARY explained that it had long been the custom for the accountant to sign the transfer; and Mr. FOLLETT (the accountant) produce the unclaimed dividend book to Mr. Rhodes, and requested that gentleman's inspection of it. (A laugh.)

Mr. RHODES explained, that he was by no means finding fault with the mode of proceeding; but that, after recent transactions, he wished to be informed of the fact.

The CHAIRMAN assured Mr. Rhodes that the directors were as cautious as it was possible for them to be.

The resolution declaring the dividend at the rate of 17s. 6d. per share, free of income-tax, for the half year, passed *nem. con.*

The CHAIRMAN, in answer to a question put by Mr. Vandewall, stated that the dividend would be payable on the 28th of March.

Mr. HALLETT moved, and Mr. VANDEWALL seconded, a vote of thanks to the chairman and directors.

The CHAIRMAN, in acknowledging the vote, said: Gentlemen, it is exceedingly gratifying to me to be always receiving this compliment at your hands. I have had the good fortune, since I have had the honour of presiding in this chair, of receiving this compliment not unfrequently; but I am very much indebted, for the progress we have made, to the assistance of my colleagues. They share with me equally the gratification of finding that your accounts are now in a much better state than they were formerly. I hope the concern will still progress, and that we shall go on smoothly.

CRYSTAL PALACE DISTRICT GAS COMPANY.

The General Annual Meeting of the Shareholders of this Company was held at the London Tavern, on Tuesday, the 3rd inst., to receive the report of the directors, to declare a dividend, and for general business. Mr. ERASMUS WILSON took the chair at three o'clock.

The SECRETARY (Mr. Magnus Ohren) read the notice convening the meeting, and the minutes of the last general court. The seal of the company was then affixed to the register of proprietors.

The CHAIRMAN said: Gentlemen, the report of the directors, to which I now call your attention, has been printed and placed in the hands of every shareholder in the company. From the perusal of that report, the shareholders will see that the position of the company is most flourishing, and its prospects the most encouraging. We have every reason to expect the most complete success, or at least such a measure of it as every commercial undertaking prosecuted with vigour and determination ought to attain. I need not remind you of the excellent position which the works of the company occupy, of the wide spread of our mains, or of the enormous and constantly-increasing extent of building operations taking place within the mesh-work of our embrace. You will see in the report a reference to the rapid increase in the annual income of the company, and of the generally favourable circumstances in which we are placed, and which enable us to declare a very good—I might almost say a very handsome dividend, considering the short time that our works have been in operation. (Hear, hear.) Perhaps it might have been possible for your directors to have increased the amount of dividend beyond 5½ per cent., had we thought it judicious to do so; but we felt it was desirable to retain a certain portion of money in hand, to meet emergencies which might arise; and we have, therefore, carried a small amount to the credit of next year's profits. You will see, too, that we have progressed in those other operations which are connected with the distillation of coal and the production of gas; I refer to the items of tar and the sulphate of ammonia. With regard to the latter, I may be permitted to make an observation or two, which will be interesting to some of the shareholders, who may not be familiar with the practical operations of gas-making. In the process of the distillation of coals there is given off a large quantity of water, highly impregnated with ammonia—ammoniacal liquor, as it is called. This material has to be disposed of; and, by the recent regulations of the Board of Health, it is considered as a nuisance to keep it on the premises, unless placed in such a position, and sufficiently protected, so as to prevent any inconvenience to the public. If allowed to flow away from the works into the surrounding ditches, we should be liable to a prosecution; and therefore we are forced to retain it upon the works, where, unless something is speedily done with it, it may prove noxious to those engaged in our service. The question then arises, what is to be done with this ammoniacal liquor? In certain gas-works, it is sold as it is; but, in order to be saleable, it is necessary that the place where it is created shall be near to some factory in which it can be converted into a useful form—for in the form of liquor it is not so. We, unfortunately, are placed at a distance from such factories, and therefore have from time to time a large quantity of this water upon our premises, which we must get rid of, and yet is useless unless it can be turned into some more portable form; for the selling price of ammoniacal liquor is about ½d. or ¼d. per gallon, the whole of which sum would be swallowed up in the expense of carriage. Under these circumstances, and knowing that it contained a valuable element, if we could but secure it, we have, at a comparatively small expense, set up an apparatus for the purpose of giving to this material a marketable value. The result is, that we have been able to turn this dirty, filthy water into an exceedingly beautiful salt, the sulphate of ammonia, which is extensively used in agricultural districts as a manure; and which, when cleared of its impurities, and rendered white, is a valuable medicine—in fact, the carbonate of ammonia of the physician, and the smelling-salts of the lady, who carries it about with her to restore the nervous system when oppressed by fatigue and overcrowded rooms. Thus, by an inexpensive contrivance, we have been able to make good use of that which before was useless, and, in truth, a great nuisance. We had no means of getting rid of it—we could not sell it, we could not give it away, we dared not throw it away—but it is now, I am glad to say, converted into a material which produces us £13. 15s. per ton, and of which we can produce 7 cwt. in the course of a week. The engineer, indeed, tells me that some weeks we have produced upwards of a ton. (Hear, hear.) Gentlemen, I will not detain you longer, but will now call upon the secretary to read the report, and the accounts appended to it. (Cheers.)

The SECRETARY then read the following:—

REPORT OF THE DIRECTORS TO THE SHAREHOLDERS AT THE THIRD ANNUAL GENERAL MEETING, IN MARCH, 1857.

The directors have the pleasure of reporting to the shareholders the steady and continued improvement of the business of the company, and its progressive advancement in commercial success and public importance. During the last year the number of private consumers has largely increased, new railway stations have been lighted, and public lighting has been commenced throughout the greater part of the district. To effect these objects it has been necessary to somewhat extend the district, but it is anticipated that no further increase in extent will be required beyond that which has already been effected; the future operations of the company, in reference to mains, being to fill up the space included by the present limits as soon as the increase of building may render it necessary and profitable to do so. A comparison of the annual gas rental, during the two years and a half that the company has been at work, will show the amount, and the rapid increase of its business. Thus, in 1854 (half year), the gas rental was £1736. 16s. 11d.; for the entire year 1855 it was £5078. 8s. 8d.; and in the year now passed, 1856, £6585. 19s. 11d. It is estimated that, at the present time, the company are in possession of a gas rental of nearly £8000 per annum.

The directors have to mention (in common with other gas companies) a decrease in the value of coke, which has arisen from causes entirely beyond their control. On the other hand, they have laid in coals at a lower rate, have obtained a higher price for tar, and are carrying on successfully the conversion of ammoniacal liquor into solid sulphate of ammonia.

The apparatus for the last-named purpose has been erected since November last, and has fully realised the expectations of the engineer of the company. Above seven tons of sulphate of ammonia were produced up to December 31, 1856, and since that date a further quantity of four tons, all being disposed of at fair prices, producing a good profit to the company.

The directors have duly registered the company under the act of last session, for the regulation of joint-stock companies, as required by the said act.

The small gasholder at Westow Hill, and the greater part of the old surplus apparatus, have been sold.

The land at Lower Norwood is not yet disposed of, but your directors hope to find an early opportunity for its profitable sale.

Notwithstanding the largely-augmented revenue of the company, your directors have been enabled during the last year, by a re-arrangement of their staff, to effect a considerable reduction in the amount of salaries and office expenses, without at all diminishing the remuneration or the efficiency of their present officers.

At the end of the year 1855, the sum of £8673. 13s. 2d. still remained due in arrear on shares; since that date, £1226 of these arrears have been paid, leaving £7446. 13s. 2d. still unpaid. It is the intention of the directors, at the annual meeting, to ask authority from the shareholders to make such arrangement with the parties in arrear as they may think best for the interests of the company; and, in the event of no such arrangement, to take immediate measures for the recovery of the overdue calls, or for the absolute forfeiture of the shares, and their disposal, *pro rata*, among the existing shareholders. The directors have the less hesitation in recommending this course as the shares now hold a good position in the market.

The directors who go out of office by rotation the present year are Mr. George Pearce Pocock and Mr. George Silvester; and these gentlemen, being eligible for re-election, offer themselves to the meeting for that purpose.

The auditor going out of office the present year is Mr. William Pashley, and, being eligible for re-election, offers himself to the meeting for that purpose.

The directors have the painful duty of reporting the death of one of their number, Mr. George Augustus Oliver. They have filled up temporarily the vacancy thus created by the election of Mr. William Morrison, of Fenchurch Street, City; and have also elected Mr. Charles Aird, the lessee of the Kingston Gas-Works, to a seat at the board: these gentlemen, therefore, offer themselves to the meeting for confirmation in their office.

The directors have the pleasure of concluding their report by calling the attention of the shareholders to the accompanying balance-sheet. It will be seen that the profits on the year amount to £2297. 8s. 1d., out of which the directors have declared a dividend on the paid-up capital of the company, at the rate of 5¼ per cent. per annum, which, after setting aside the sum of £415 for depreciation of plant, mains, meters, and services, and £67. 7s. 10d. for unpaid debenture interest, leaves a balance of £107. 1s. 8d. to be carried to the profit of the next year.

Dr. CAPITAL ACCOUNT, DECEMBER 31, 1856. *Cr.*

To preliminary expenses	£4,007	4	5	By joint-stock capital—			
Plant	6,409	5	5	3850 shares, at £10 each	£38,500	0	0
Ammoniacal apparatus	223	8	3	Less calls unpaid	7,446	13	2
Sydenham shares	7,893	4	6			£31,053	6 10
Sydenham works	3,815	14	3	Debentures (C. P. D. Gas Company)	£6,750	0	0
Land at Norwood	1,425	0	0	Do. (Sydenham Gas Company)	1,200	0	0
Mains and services	11,276	9	5			7,950	0 0
Meters	745	6	1				
South Metropolitan Gas Company	1,289	2	0				
Office furniture	90	3	0				
		£37,174	17 9				
Balance to trading account		1,828	9 1				
		£39,003	6 10			£39,003	6 10

Dr. TRADING ACCOUNT, DECEMBER 31, 1856. *Cr.*

To stock on hand		£1,869	9 2	By balance from capital account		£1,828	9 1
Rental and arrears	£2,953	16	7	Amount due to sundry persons		3,059	5 5
Amount due from sundry persons	1,842	2	11	Profit and loss		2,297	8 1
		4,795	19 6				
Balance at bankers		519	13 11				
		£7,185	2 7			£7,185	2

RECEIPTS AND EXPENDITURE, DECEMBER 31, 1856.

Dr.			*Cr.*		
To balance at bankers		£2,848 9 0	By rent, rates, and taxes	£ 889 2 3	
Cash for share account	£1,346 0 0		Directors' and auditors' fees, salaries, and wages	1,968 2 11	
Rental and fittings	5,650 11 4		Sundries	3,547 12 10	
Cash for products	1,382 1 8		Coals	2,987 6 2	
Cash from sundry persons	3,239 1 11		Mains, services, meters, and fittings	2,830 17 9	
		11,617 14 11	Debenture interest	444 15 2	
			Dividends	1,278 12 11	
					£13,946 10 0
			Balance at the bankers		519 13 11
		£14,466 3 11			£14,466 3 11

PROFIT AND LOSS, DECEMBER 31, 1856.

Dr.			*Cr.*		
To coals, lime, and sundries		£3,220 19 11	By balance unappropriated		£ 1 6 6
Trade charges, repair of meters, machinery, &c.		914 12 3	Dividend on Sydenham shares		421 16 5
Rent, rates, and taxes		738 6 10	Interest on deposit at bankers	£16 13 1	
Directors' and auditors' fees	£260 10 0		Discounts and allowances	31 4 9	
Committee of shareholders' expenses	35 0 0				47 17 10
		295 10 0	Gas and meter rental, and fittings		7,117 3 2
Salaries and commission to rental collector	£536 17 4		Products—Coke, breeze, tar, ammoniacal liquor, sulphate		1,366 9 8
Carbonising and general wages	647 11 0				
		1,184 8 4			
Interest on debentures		303 8 2			
Balance		2,297 8 1			
		£8,954 13 7			£8,954 13 7

APPROPRIATION FOR DIVIDEND.

Share capital, £31,053. 6s. 10d. at 5½ per cent		£1,707 18 7
Unpaid debenture interest		67 7 10
To be written off for wear and tear—		
Off plant, mains, &c., £21,000, at 1½ per cent.	£315 0 0	
Off meters and services, £2000, at 5 per cent.	100 0 0	
		415 0 0
Balance unappropriated		107 1 8
		£2,297 8 1

Col. BAZALGETTE said it must be satisfactory to the proprietors generally to hear the report just read, and to find that the accounts this year were presented in so much more perfect a state than on the previous occasion. He inquired what the total cost of the new ammoniacal apparatus had been.

The CHAIRMAN: The whole cost was £223. I now move "that the report of the directors and the accounts, as read to the meeting, be accepted, adopted, and entered upon the minutes."

Mr. WALTER FORD seconded the motion, which was adopted.

The CHAIRMAN: My next duty is an exceedingly pleasing one: it is that of proposing to you to declare a dividend at the rate of 5½ per cent. out of the profits of the company, and that such dividend shall be payable at the expiration of twenty-one days from the present date, as provided by the deed of settlement. In looking at the large balance of profit upon the last year's trading, you will observe that it would be quite possible to divide a much larger dividend than 5½ per cent.; but your directors feel that it would be very undesirable such should be done, and that it would be more judicious to reserve our strength for some future day. It is a much more pleasing position for us to be in, not to divide our last farthing, but to lay by something out of our present earnings to meet any contingencies which may arise in the future, or to increase our dividends on some other occasion. (Hear, hear.)

Mr. S. L. RYMER seconded the motion, and expressed his obligations to the directors for the zeal and energy they had displayed in carrying on the operations of the company during the last year.

The motion was unanimously agreed to.

The CHAIRMAN: We now come to the question of arrears of calls on shares, and it is the intention of one of the directors to address you upon this subject.

Mr. STEPHENSON: I am about to submit a resolution to the effect that, it being desirable that means should be at once taken to recover the over-due calls on shares, this meeting authorises the directors to make such arrangements with the parties in arrear as they may think best for the interests of the company; and, in the event of no satisfactory arrangement being come to, then to take immediate measures for the recovery of the overdue calls, or for the absolute forfeiture of the shares, and their disposal *pro rata* among the existing shareholders. From various causes there have been, and are now, arrears on calls to the amount of £7446 still unpaid. The directors are strongly of opinion that the parties who have been in arrears, and who have not stood by us in the early history of the company, should not be allowed any longer to profit by their connection with us, now that we have brought the concern into a successful position, unless, indeed, they are willing to pay up their shares. (Hear, hear.) Two or three of the shareholders are, as we know, in a somewhat peculiar position, and I propose this resolution so as to give us power to come to some arrangement with them, by which, perhaps, by giving up some of their shares, they will be able to pay upon the others; and, if our efforts in that direction should fail, then that we may proceed, if thought desirable, under the powers of the new act, and declare them absolutely forfeited. Every shareholder who has paid upon his shares will agree with the board, that, in our present position, it is not advisable to have any defaulters in the company. (Hear, hear.)

Mr. S. CLARKE seconded the motion.

Mr. SHAVE thought that the time within which the directors should be at liberty to make the proposed arrangements should be limited, and also the expenses of recovering the arrears. He had every confidence in the directors, but felt that the most expeditious way of settling the matter would be to fix a time—say six months.

After a brief conversation, Mr. Shave's suggestion was incorporated in the motion, which was then put and carried.

Messrs. G. Silvester and G. P. Pocock, the retiring directors, and Mr. Pashley, the retiring auditor, were re-elected.

The confirmation of the appointment by the directors of Mr. Morrison was then made, and Mr. Chas. Aird also elected to a seat at the board.

Mr. HETLEY said he was anxious to be relieved from the duty of auditing the accounts of the company, and would suggest that Mr. Fasson was a suitable person to appoint in his place.

The CHAIRMAN said he was not surprised, though he regretted the announcement just made by Mr. Hetley, for whose services the company were deeply indebted. (Hear, hear.)

Mr. P. LE NEVE FOSTER moved that Mr. Fasson be appointed an auditor of the company.

Rev. Mr. POCOCK seconded the motion, which was adopted.

In answer to questions by Col. BAZALGETTE—

The CHAIRMAN said: In an early report the shareholders were informed that we hold a majority of the shares in the Sydenham Company. Those shares are distributed among the directors and amongst certain of the shareholders; but every holder of those shares has signed a formal and distinct deed, by which he makes himself a trustee of those shares for the company. In reference to our late solicitor, I beg to say that all our accounts are fully settled.

A vote of thanks to the auditors, moved by the chairman, was then adopted.

Mr. STEPHENSON: I have now to submit a resolution which is peculiarly gratifying to me, because on some previous occasions I have had to differ with some of the officers of this company. I move that the thanks of the meeting be given to Mr. Christie, our consulting engineer, and to Mr. Ohren, our secretary and manager, for the efficient manner in which they have discharged their duties, and for the very perfect state in which the works of the company now are. (Cheers.)

Mr. P. LE NEVE FOSTER seconded the motion.

The CHAIRMAN: This is a motion in which we are all interested. We can make no progress without good officers, and it is a matter of great satisfaction that we are at this moment so well off in that respect. (Hear, hear.) I believe our officers are as thoroughly one with us as we could possibly desire, and therefore I ask you to accept and pass the motion unanimously.

The resolution having been cordially adopted, a vote of thanks to the chairman and board of directors closed the proceedings.

CORK GAS CONSUMERS' COMPANY.

The First Half-yearly Meeting of the Shareholders of this Company was held on Monday, the 2nd instant, at the Imperial Hotel, for the purpose of electing seven directors for the ensuing year, and of hearing the directors' and engineer's reports read.

On the motion of Mr. P. HEGARTY, the chair was taken by Mr. MAGUIRE, M.P.

The CHAIRMAN said: Gentlemen, I have, in the first place, to apologise to you for not being here at an earlier hour; but the fact is, there was a meeting of the town council held this day, and which it was compulsory by law to hold; and at it a matter personally interesting to the mayor and several members of the council was introduced, the discussion upon which occupied nearly an hour. But so soon as it was possible for me to do so, I moved the adjournment of the council, in order that I might be here at the earliest moment. (Hear, hear.) To show you that the delay which has occured was not intentional on my part, I need only say that I came over from London by express in order to be here to-day. (Hear, hear.) And, gentlemen, I assure you if I did not believe it to be of the utmost importance to be present at this meeting, I should not have left my place in Parliament; but I do think that the subject which has called us together to day is of the greatest importance, not alone to the shareholders of this company, but to the citizens of Cork in general. (Hear, hear.) Besides, I hold that the directors who have hitherto managed the affairs of the company acted under a peculiar responsibility, and were pledged to their fellow-citizens to see that their promises were fairly and honourably carried out. (Hear, hear.) I will now briefly refer to some matters in connection with our undertaking. When this company was started there were several objections raised to it. Some of those were honourable and fair objections, but more of them were disingenuous and unfair. (Hear, hear.) Now to an honourable objection we were bound, and were at all times ready, to give a fair explanation; and even to the various idle, baseless, and mischievous rumours which were industriously circulated against the company, the directors were at all times just as ready to afford a fair explanation and a satisfactory answer, although the quarters from which they came were entitled neither to confidence nor respect at their hands. (Hear, hear.) One objection was honestly urged against this undertaking—namely, that the citizens of Cork should have left the duty of supplying the city with gas to the council, and that, in fact, that body ought alone have the right and power of doing so. Now, after the fullest consideration of the question, I am satisfied that this would have been a most imprudent course to adopt—(hear, hear)—and the experience I have derived since the formation of this company has rendered my conviction on that point only the more decided. In the first place, the council have already too much to do, without undertaking any additional duty. They have to provide an abundant supply of water for the citizens—a matter of the very greatest importance, and one to which all their energies should be directed. (Hear, hear.) They are also bound to carry out several matters of minor importance; and, if the duty of providing gas were also thrown upon them, they could not do it properly. But, even supposing they were able to undertake this duty, which, I contend, more properly devolves upon the citizens themselves, there is a strong and, in my mind, conclusive reason why the council should not have done it. If the council had entered into a negotiation with the United General Gas Company six months ago, what would have been the result?—that you should have purchased not only

their plant, but their good-will. (Hear, hear.) Their plant exists at this moment, but their good-will does not. (Hear, hear.) That good-will is yours by the good-will of your fellow-citizens. (Hear, hear.) Then you are all aware of the manner in which the corporation purchases anything. If they purchase anything on behalf of the public—be it a house, a cabin, or even the angle of a house—it is always done at an enormous sacrifice to the public, and for the corresponding gain and advantage of the individual. (Hear, hear.) If the corporation intended to purchase the works or plant of the London Company, they should have given a maximum price for it—a maximum price for a deteriorated plant. (Hear, hear.) Now, in order to show you how a plant becomes deteriorated by time, I may instance a case in which your engineer, Mr. Anderson, is personally interested. That gentleman has lately become the lessee of the Dover Gas-Works, the mains of which were laid down about the same time as the Cork mains. Mr. Anderson was compelled the other day to take up one of the Dover mains; and in what state did he discover it to be? It actually fell to pieces; it was no longer iron; it was a substance known to the profession by the technical term of "plumbago"—(laughter)—a thing which was absolutely worthless. (Hear, hear.) I will give you a stronger case in point, which will show the danger that would have resulted from the corporation or the citizens rashly entering into a bargain for the old plant—the deteriorated plant—of the London Company. There was a meeting of the Chester United Gas Company (Limited) held in London on the 29th of January; and, in the course of his address, the chairman stated the following facts, which are important to us in more than one particular:—

> The sum of £5115. 10s. 4d. has been spent by the directors, between July and December, upon new buildings at the Rhoodee, new and admirable purifiers, new mains, and the taking up of old mains and old services. I am sorry to say that, as far as the latter experiment is concerned, it has been a losing one, in one sense. We expected that the produce of old mains taken up would not only have paid the cost of removal, but left us a surplus. *The result has been the other way. The cost of removal and re-arrangement has far exceeded the amount produced to the company by their sale.* In another point of view, however, the result has been most gratifying, for the 33½ leakage, at which the old company stood, has been reduced to 18 per cent. by this step; and the directors confidently hope that this may be still further reduced during the current year.

Now as to leakage, I can state, with something of authority, that the leakage of the Cork Company is about 30 per cent. (hear, hear), which, if the corporation or the citizens had purchased their works, would be to them a constant source of waste, and consequent loss; besides which they should have to keep a considerable sum in bank at all times, for the purpose of taking up the old mains, and replacing them by new. (Hear, hear.) It was, therefore, much better, safer, and more economical, to start with new works and new mains, for the profit would be greater and more secure, and not be absorbed into the soil, as is the case when the plant is old, and therefore deteriorated. (Hear, hear.) Now, in reference to another matter of great importance, the act under which the company has been incorporated, I will say a word or two. A very respectable citizen asked me some time since—"Have you confidence in this Limited Liability Act?—do you believe there is sufficient protection for the individual shareholders?" In the first place, there was no step taken without the advice of experienced and able counsel; and the opinion of first-rate lawyers, not in this country alone, but in England, is, that there is ample security and ample protection for the shareholders—(hear, hear)—that no shareholder could, under any circumstances, be called on, or compelled to pay one single farthing more than he originally covenanted for. (Hear, hear.) For instance, if a person took 20 shares in this company, of £5 each share, under no circumstances could he be called on to pay more than £100. (Hear, hear.) Suppose he had paid, by calls, £75 out of the £100, and that the company did not succeed, and that its affairs had to be wound up, he could under no circumstances be compelled to pay more than the balance of £25. (Hear, hear.) To be more fully assured as to the operation of the act, I made it my business, last week, to speak to Mr. Lowe, the Vice-President of the Board of Trade, on this matter; and here is the return which Mr. Lowe procured from the Registrar in London. It is dated the 25th of February, 1857—"Number of new companies formed under the act of last session. With Unlimited Liability, 5—with Limited Liability, 279." (Hear, hear.) Now all these 279 companies have been established with the advice of eminent counsel, and after the most careful and elaborate scrutiny of the act. And this great number exhibits the amount of confidence felt in its provisions. (Hear, hear.)

Mr. HAYES: Are you quite satisfied that this company is under the Limited Liability Act? (Hear, hear.)

CHAIRMAN: The hon. shareholder asks is the company under the Liability Act.

Mr. HAYES: Are you satisfied of it?

The CHAIRMAN: There is no doubt of it.' '(Hear.) It is registered.

Mr. HAYES: Registration is one thing—being actually under it is another. (Hear, hear.)

The CHAIRMAN: I know the motives that dictated the question were the best possible towards the company; for the gentleman who has asked it was one of those who, on being asked by me in the street to become a shareholder, immediately went into a shop and put down his name for 25 shares—(hear, hear)—and did so to assist merely a useful public object.

Mr. HAYES: The reason I ask the question is, because I heard it openly stated it was not under the act, that it required a certain amount of capital to be paid up before registration brought within the operation.

Mr. NAGLE (solicitor to the company) said Mr. Hayes was quite right. The act of 1855 required a certain amount to be subscribed, but the act of 1855 was repealed by the act of 1856, which was altogether irrespective of the amount. (Hear, hear.)

The CHAIRMAN: I am glad that Mr. Hayes has asked the question, which he has done in the best faith—(hear, hear)—for the answer given is such as to remove all doubt as to the position which we occupy. It has been remarked by opponents of this company—"are not the promoters of the new company endeavouring to establish a monopoly as bad as the old monopoly?" Let us see what the two companies are. What was the old company's monopoly? A certain number of gentlemen in London, whose faces we never saw, with whose very name we are unacquainted, and with whom we never had, or will have, the slightest connexion, alone had the right of supplying us with gas, which they did at a very high and exorbitant price. (Hear, hear.) What is now being done in Cork? The citizens of Cork, being consumers of gas, have established a company in self-defence; and, of the 502 shareholders now on the list, I know, to my own knowledge, there are not thirty, or even twenty, who are not gas consumers of the city of Cork. (Hear, hear.) Now, inasmuch as they are all interested in having their gas at a fair price, I cannot by any means understand how there can be a monopoly, or how the interests of the Citizens' Company can be in any way antagonistic to those of the general public. (Hear, hear.) Oh, but it was said, it may be a monopoly, "for the English directors will buy you up." To show you how difficult it would be for these imaginary people from England to purchase us up, I will give you some of the results of an analysis which I have just made of the list of shareholders—and which will also satisfy you that there has been, certainly as yet, no attempt made to invest for the purpose of mere speculation. (Hear, hear.) There are but four parties who have taken 100 shares each; one has taken 75 shares; 11 have taken 50 shares; one holds 40; a few hold 30; and 20 have taken 25—so that the number of shareholders holding 25 shares and over does not exceed a total of 39. The number holding 20 shares is 24; holding 10 shares, 69; holding 8 shares or 6 shares very few; holding 5 shares, 124; holding 4 shares and 3 shares but few; while those holding one share each are 108. (Cries of "Hear, hear.") These statistics showed that the shares of the company were distributed over a large number of persons, who had joined, not with a view of speculating, but for the purpose of protecting themselves from a monopoly which they considered and felt to be both odious and unjust. (Hear, hear.) Let us now turn to the prospects of the future. We calculate, and with certainty, on having for the year 1858 an income of £15,000, as good money as was ever lodged in the Bank of Ireland. (Hear, hear.) The capital we require to distribute in shares need not exceed £40,000, or 5000 shares at £5 each share. The company reserve a borrowing power of £20,000, which would make in all a gross capital of £60,000. (Hear, hear.) I shall now tell you what portion of this capital is necessary to construct, carry on, and complete the works. A sum of £38,000 will carry us on to the 1st of April, 1858, when the first quarter's income will be coming in. (Hear, hear.) £50,000 will be enough to complete the works, even assuming that we had the entire trade of the city in our hands; and this will allow for a probable increase to the present consumption for a period of two or three years. But a further outlay of £5000 will be sufficient to meet any increase in the consumption which could be contemplated for the next ten years—(hear, hear)—so that while £55,000 would be amply sufficient to realise the most sanguine expectations which we can at present form of the gas demand of Cork for many years to come, we will have £5000 of our borrowing power still unexhausted. (Hear, hear.) Now the estimate put by Mr. Gibbings on the works of the London Company, a vast portion of which is as old as the year 1825, was £60,000; so that I think it will appear to you that the directors adopted a wise course—namely, to erect new works, and lay down new mains—(hear, hear)—and that this plan is much to be preferred to taking an old and deteriorated plant, which, like an old house, as many of you may happen to know to your cost, would constantly require renewing. (Hear, hear.) This very day the directors have been engaged in opening tenders sent in from England, Scotland, and Ireland; and I am happy to tell you that Mr. Anderson's estimate was 12 per cent. over the tenders received from the most respectable contractors. (Hear, hear.) It may be asked, on what do we base our calculation of an income of £15,000 for the first year. We have an income of £6000 pledged us by writing; and we have £2000 more verbally pledged by men of honour and integrity, our own fellow-citizens. (Hear, hear.) We then have £4000 for the public lighting; and in addition there will be the residual products of the manufacture, such as coke, tar, &c., which will realise more than £3000. Add these figures, and you will have a gross income of £15,000, not to speak of what we may expect from a large number of those who have given no distinct promise, but whose sympathies are naturally with a local undertaking. This, then, is a good state of things to begin with. (Cries of "Hear, hear.") When the state of the company was shown to the best judges of such matters in London, the universal opinion was that no undertaking could be more promising, or have so thoroughly *bonâ fide* an aspect. Then look at the manner in which the first call has been paid up, there being now in bank fully five-sixths of that call, and without any pressure whatever being used. (Hear, hear.) I would earnestly impress on you, and on my fellow-citizens generally, the prudence of making this company, as much as possible, a purely local one. (Hear, hear.) I would ask them to have the entire management and control remain in their own hands, and the profits in their own pockets. It is easy enough for the directors to dispose of shares elsewhere, and already they have applications for somewhere about 1000; but I should myself prefer that the entire 8000, to which the share capital is now limited, were held by ourselves, inasmuch as we, as gas consumers, have the most direct interest in the good management and success of the undertaking. (Hear, hear.) I know that there are many outside, as well as present here this day, whose intention it is to take shares, or add to those which they already possess; and, by carrying out this plan speedily, the entire number of shares may be easily absorbed in this city. This course I earnestly recommend to my fellow-citizens, and I do so rather as a gas consumer than as the chairman of this meeting. I ask them to put their hands in their pockets, and thus keep the company under their own control. (Hear, hear.) There is another point to which I must allude. It has been often asked, Can we have the works built and the pipes laid down in time to fulfil our contract? It has been even said to myself, "You never will be in time;" and I believe there are some gentlemen now present who feel very anxious on this question. (Cries of "Yes, yes.") I assure you I was as anxious about this matter as any one could be, and for the last six months I have taken every opportunity of satisfying myself with regard to it; and the result is, that I have not the most remote apprehension of a failure. When in Rome, in November last, I had the pleasure of meeting Mr. Shepherd—one of the most intelligent men I have ever spoken to—and he gave me important information on this very subject—information corroborated by everything I have since heard. Mr. Shepherd was the gentleman who established the company by which Rome is now lighted, and he also lit several cities and towns on the Continent. His answer to me was this (and I now read it to you from the very paper on which I wrote it down)—"You can do anything you like in pipe-laying; the amount of work to be done depends entirely on the number of hands you employ to do it." (Hear, hear.) Mr. Shepherd gave me several cases in point, showing what he had done himself, and all proving that almost any quantity of pipe-laying could be executed in a given time. But take a fact which puts the matter beyond doubt. Not long since, a London company, acting under pressure of necessity, actually laid down twenty miles of mains in a single week. (Hear, hear.) That would be at the rate of forty miles in a fortnight. We have but forty-five miles altogether to accomplish; and if twenty miles could be, and were, laid down in London in a single week, what is there to prevent us from laying down our forty-five miles in three months, four months, or five months if you please? (Hear, hear.) Mr. Anderson will tell you that we can have, and will have, all this work done two months before we are bound by our contract with the corporation to light the city. (Cries of "Hear, hear.") There is only one other point to which I think it necessary to refer, namely, the appointment of secretary. When this company was formed, in fact, was nothing better than a company on paper, a proposition was made to appoint a secretary at a salary of £300. This proposition I regarded as a mad one, inasmuch as the company was in its infancy, and the giving of such a salary would have discouraged and alarmed the shareholders, and, in fact, induced many of them to relinquish their shares altogether. (Hear, hear.) Fortunately the proposition was not adopted, and the directors wisely appointed the present secretary at a salary—not, I admit, equal to his merits, or the duties he is called on to discharge, but in accordance with the present position of the company. (Hear,

hear.) Mr. Lane is a gentleman not inferior to any man in this city in attainments, and not second to any man here or elsewhere in character, uprightness, and integrity. (Applause.) The directors can state that no man could display more zeal, more energy, more activity, or more ability, than he has shown since he accepted office; and Mr. Anderson has expressed the greatest satisfaction at having such an officer to deal with. The salary now paid is, as I said, in keeping with the present position of the company; but it must be distinctly understood that such a salary is not an adequate one, and that it should be increased with the progress and success of the undertaking. (Hear, hear.) I now, gentlemen, call on the secretary to read his report. (Applause.)

The secretary then read the following:—

DIRECTORS' REPORT TO THE SHAREHOLDERS AT THE FIRST HALF-YEARLY ORDINARY MEETING OF THE COMPANY, HELD ON MONDAY, MARCH 2, 1857.

The directors have summoned the proprietary of this company together in general meeting in pursuance of the second regulation of the articles of association.

Although the brief period which has elapsed since the formation of the company has not permitted the directors to do more than carry out the necessary preliminary arrangements, they deem it but right to avail themselves of the occasion to submit to the shareholders a full detail of the operations and prospects of the company, in connection with which it may be useful to advert to the condition of the gas-lighting question in this city, and to the circumstances which led to the establishment of this company.

Lighting by gas was introduced into Cork in December, 1825. In the month of July, 1824, the Wide Street Commissioners accepted a tender for lighting the city for 25 years, from the United General Gaslight Company, of London, which had been formed about a fortnight previously. The prices for the supply of gas in this contract were regulated by the number of burners, and the contract provided that the company should remove their pipes and plant in case of non-renewal of the contract. It is therefore natural to suppose that the necessary calculations were made before the contract was entered into, that the prices and terms were sufficiently remunerative and certain, to warrant the laying down of the requisite plant, in the face of this covenant.

In 1855, the contract was renewed for a term of 13 years, with a proviso binding the company, if required, to renew for a further term of 13 years. The prices in this contract were £3. 15s. per annum for public lamps, and to private consumers 8s. 6d. per 1000 feet, for the first three years of the term, and 7s. 6d. thereafter, besides meter-rent. The contract has created during its term a monopoly for the company. The Wide Street Commissioners and their successors were bound not to permit any other company to supply gas during its continuance.

In 1852, the Cork Improvement Act was passed, and by it the corporation, who became successors to the Wide Street Commissioners, were enabled to contract for lighting the borough for a term of three years, in pursuance of the General Towns' Improvement Act. The London company could (their contract, as is usual in such cases, being preserved) give and take a 13 years' contract. The citizens of Cork not having experienced the reductions in the price of gas afforded to other communities, the corporation in 1855, with a view of inviting competition, issued advertisements for tenders for lighting the borough, which were published in the principal newspapers in England and Scotland. No tenders were offered, with the exception of one from the United Company, which the local manager stipulated should be opened only in the case of competition.

In the past year the corporation had occasion to apply for a local act, and they sought to extend their powers of contracting for lighting to a term of 10 years, but a very determined and expensive resistance was made by the London company, and with success; and the proposed clause was struck out. It should be mentioned that the London company, whilst it has been supplying gas in Cork, also erected extensive works at Dublin, Limerick, Clonmel, Plymouth, &c.

The present dividend of the company amounts to about 3 per cent. on its share capital of £450,000, and the shares (£50 each), are quoted at 21 per cent. In Dublin, where the company has spent £300,000 in works, and in buying up competing interests, it has been exposed since 1845 to the competition of a local company, which, on an expenditure of £150,000, has erected vastly superior works, drives a larger trade, and pays a dividend of 7½ per cent.

It was natural to suppose that considerable irritation was created by the spirit displayed by the London company in its opposition to the corporation, but this might have eventuated in merely temporary excitement, had not the passing of the Joint Stock Companies' Act in the session of 1856, afforded an opportunity for rescuing the city from the anomalous and degrading position of being dependent on utter and unknown strangers for the supply of so important an article of consumption, on whatever terms and conditions they might dictate; and accordingly, on the 18th of September, 1856, the Cork Gas Consumers' Company (Limited), was regularly incorporated, with limited liability, under the new act. On the 13th of the following month, the new company made a tender to the corporation for the public lighting of the city for a term of three years, from the 1st of January, 1858, which was accepted in a council of 45 members present, out of the entire body of 56, 42 voting in favour of the Cork company, and but 3 for the London company. The latter, which up to that day persisted in braving the public feeling, made a lower tender, with the palpable object of cutting out its rival; but the effort was defeated, thanks to the spirit of the municipal body. The day after this decision was given, the London company offered its gas to all private consumers willing to contract for a term of three years at the rate of 5s. per 1000, although its charge had been 7s. previously.

A public meeting of consumers was held on the 15th of October last, to counteract this movement, and the Cork company, without descending to the expedient of enlisting support by the bait of a price below fair mercantile terms, took up the suggestion of the old company, and commenced an active canvass of the gas-consuming inhabitants; and it is highly creditable to the public spirit of the community that they not alone rejected the insidious boon, but also, as will appear, subsequently, by a very decided majority, entered into contracts to deal with the Cork company for the same term at a higher price.

After various negociations for other less advantageous sites, your directors, on the 1st of January, 1857, concluded terms for a lease in perpetuity of a very eligible site for the works, immediately adjoining that of the London company. The lot, comprising about three acres, together with a very suitable residence for a manager, has been obtained on favourable terms.

Immediately after obtaining possession of this site, the necessary excavations were commenced, for a gasholder tank; and a quantity of excellent limestone, fully adequate to the erection of all the necessary buildings for the production of gas, has been raised in this operation.

The tenders have been advertised for the construction of the requisite buildings and gas apparatus, and the supply and laying of the mains and pipes; and the directors expect that within a fortnight from this date the contracts can be duly executed for the immediate commencement of the works. Whilst these preparations for works have been made, your directors caused a very accurate investigation to be instituted into the statistics of gas lighting in Cork, with a view of ascertaining the amount of rental secured to the company; and they have much pleasure in stating that the result of their inquiries shows that the payments for gas last year by the shareholders and the other consumers who have made written contracts with the company, amount to £6000; and that, so far as they can discover, the consumption of those who have contracted with the London company represents a rental of only about £1000 per annum, or about one-sixth of that secured by your company. Of the remaining estimated rental of the city, being about £4000, a considerable amount has been promised verbally by persons who refused to sign for either party, but pledged themselves to support your undertaking. Even supposing that you obtained only one-half of this £4000, you will thus have from private consumers an annual income of £8000, as the increased consumption which a reduction of price always insures will make the gas rental of 1858 equal to that of 1856. Counting coke and other residual products at £3000, and the public lighting at £4000 per annum, you may, therefore, calculate on receiving an income of £15,000 a year from the very outset of the undertaking.

As it was alleged that the plant of the existing company had cost £60,000, or rather that this sum represented the lowest price which could be placed on it, it was deemed judicious to fix the nominal capital of the company at this sum, £60,000, divided into 12,000 shares of £5 each. Since the execution of the articles of association, careful estimates of the cost of the new works have been gone into, which satisfy the directors that the nominal capital is too large, even assuming that the company had the entire consumption of the city, and that therefore the provisions of the deed in this respect require modification. The accuracy of the remodelled estimates has been tested by the fact that the most respectable firms have tendered for the supply of the necessary mains, pipes, and apparatus, at prices fully 12 per cent. lower than those calculated by the engineer of the company, and that several of them have, unsolicited, offered to take a large proportion of the contract in shares. These facts will enable the shareholders to judge of the commercial value of the London company's works.

For the present, therefore, the directors recommend that the issue of capital should be restricted to 8000 shares—an amount of share-capital which they are convinced will be amply sufficient for the requirements of the company, and will leave, in all probable contingencies, more than half their borrowing powers unexhausted. By thus restricting the shares issued at the outset to a defined limit, the value of the shares will be necessarily increased by the guarantee thus afforded that they will not be depreciated by the issue of an unnecessary number. A precedent is afforded for this course by that pursued by the Great Central Company of London, which, although it fixed its nominal capital at 25,000 shares of £10 each, only issued 17,000, an amount somewhat below the estimate of the works.

The register of shares to this date comprises 502 persons, who, with the exception of four persons, are all residents of Cork, out of which locality the directors have not as yet circulated a single prospectus.

The spontaneous offers of contractors would absorb a very considerable proportion of the remaining shares, at the same time that their tenders are below the engineer's estimates.

The directors, who would prefer that every share in the undertaking should be held in the city, mention this circumstance to show that the prospects of the company are estimated very highly by the class of persons whose experience on such matters entitles their opinion to the greatest weight.

Under the advice of eminent parliamentary counsel, a bill is being prosecuted in Parliament on behalf of your company, with a view of effectually protecting its interests against an attempt of the London company, which, if not watched, might prove prejudicial. In taking this step, the directors have deferred solely to the view of counsel, as their own interests and duties render them most unwilling to encounter parliamentary expenses.

It affords the directors much gratification to state that the call recently made by them on the shareholders has been met with great promptitude—five-sixths, at least, of the call being paid in, and the unpaid residue, being due by parties of unquestionable solvency and respectability.

The ENGINEER'S report was read and adopted.

THE ENGINEER'S REPORT.

Messrs. the Directors of the Cork Gas Consumers' Company (Limited).

Gentlemen,—In accordance with your resolution to commence practical operations, you will remember that on the 1st of January in the present year, we repaired to the ground of the company, and staked out the site of the gasholder tank, and that within three days of this proceeding, the contractor for the excavation commenced his operations.

Since that time I have further matured and completed drawings and specifications of the greater portion of the apparatus. The whole of them have been before the public since the 20th of the month, and tenders for four-fifths of the cost of the works will be before you prior to your next meeting of shareholders early in March.

I have been anxious to get your affairs resolved from a state of engineer's estimates to a state of contractor's tenders—or, in other words, to a state of facts as to the actual cost; for, however much faith you might be disposed to place in me, I am ever adverse to drawing much on that quality of our nature when there is an opportunity of substituting facts for hypothesis; besides, I have learned that it has been hinted by persons who ought to know better, that my estimates would be found inadequate to the work, The best answer to such—if one were required—will be the tenders, which, with further experience, I fully expect you will find to be from 10 to 15 per cent. under the prices which I have put against the matters to which they refer.

The progress made in the execution of the tank excavation is quite satisfactory, and in about two weeks it will be sufficiently progressed to admit of building being commenced.

Already we have obtained from the tank excavation a quantity of fine stone more than sufficient to build the whole of the works; and as it is entirely of limestone, I have to propose that we receive tenders for the building on the supposition that the company furnish lime in addition to the stone.

The company will require hydraulic lime in the purification of the gas, and a lime-kiln, costing about £60, would insure fresh burnt lime both for the construction of the works now, and for the conduction of them afterwards.

In the masonry of the gasholder tank it is lime that will be used, and as this has to be brought from Wales, and will necessarily occupy some time, I have to propose that the company at once take measures to procure say about 500 barrels of that material, and it will be stipulated in the specification that the contractor shall receive this from the company at a fixed price, so that all preliminaries may be taken that the work may be commenced immediately on signing the contract. I do not propose this measure of expedition in consequence of any want of time, but to avail ourselves of the early portion of the season, which, from experience, is generally the driest, and therefore the best, as well as the most economical, for the execution of under-ground work.

In the specifications I have stipulated that by October of the present year they must be complete under heavy penalties, and in no case have I had a murmur as to time.

In the matter of the pipe-laying, about which some questions have been put to me in Cork, a gentleman of the highest eminence in that profession, one who is in the constant habit of undertaking work of that kind of much greater magnitude than yours, and who can therefore speak with the authority of experience—after reading the specification, voluntarily stated, "Well, you have plenty of time." I mention this, as the question of time has been frequently put to me. There will be a large amount of competition for your contracts—judging from the fact that most of the large firms in the trade have had copies of drawings and specifications, and in several instances the principals have called on me, and volunteered their readiness to take shares to a considerable amount of their respective contracts.

One gentleman, whose department will amount to about £5000, offered, if his tender was accepted, to take payment one-fifth in shares. Another, in which the amount will be about £4000, offered to take a fourth in shares; and, in the matter of street pipes—which will amount to one-third of the whole capital of the company—a partner in one of the firms from whom you will receive a tender, stated that, in case it would be any inducement, he had no doubt but his firm would take a portion in shares.

Not having any instructions from you I have not held out views of this kind, and the tenders which you will receive are therefore not based on such calculations; nevertheless, my ears have been open to what gentlemen had to say, and my function ceases by laying the information before you, remarking that it indicates the opinion that is held of your undertaking in quarters where trade and a return for the money invested is the only consideration, and where such opinion has only been formed by what could be known of your doings from newspapers, and the statement I was enabled to make of the business I knew to be ensured to the company, and where the great moral influence arising out of a numerous proprietary, themselves large consumers of gas, and embracing the first merchants of the city—and which I have witnessed—has not been by them seen, and therefore cannot be appreciated.

Although it is usual for contractors to take part payment in shares in new companies, and, no doubt, many respectable firms will only be too glad to have your orders on such conditions, I would, nevertheless, advise you to keep your financial operations confined to the citizens of Cork and their friends, that the profits arising out of the investment of capital as well as from the manufacture of the gas, may be secured to your own locality—for by every indication by which I can at present judge, I look upon your undertaking as one of the safest with which I have been connected, not excepting the London companies, who are paying 8 per cent., while selling gas at 4s. 6d. per 1000 feet.—I am, Gentlemen, yours, &c.,

GEORGE ANDERSON.

Mr. KELLER wished to know if, in electing directors, the shareholders were to be confined to the printed list which had been placed before them, and which contained only 13 names?

The CHAIRMAN: That is a most important question, and I will give an explanation. It was fortunately remembered the other day that there should be a number of shareholders put on the list to be proposed at the meeting, a certain number of days before that meeting was held. Now, gentlemen, you will be quite surprised to know how very small a number of persons there is who are eligible to act as directors this day. Of the 39 persons who have

the requisite number of shares, four are office holders—Mr. Anderson, Mr. Lane, and the two solicitors—all of whom hold 50 shares each. Some other gentlemen could not be induced to act, and others have increased their number of shares within too short a period to become directors to-day—so that I do not think there are 16 persons qualified to be upon this list at the present moment. The list is, therefore, a very small one, but at our next meeting I hope it will be much larger. (Hear, hear.)

The CHAIRMAN: I beg leave to move that the report be adopted.

Mr. F. B. BEAMISH had much pleasure in seconding the adoption of the report, and requested that this be added:—"The directors, on the 27th of December, appointed Mr. Denny Lane secretary to the company; and they deem it only a simple act of justice to state, that the zeal and activity which Mr. Lane has displayed in the execution of duties of considerable importance to an infant company, have amply justified their anticipations that his appointment would be attended with great advantage to the company."

The adoption of the report, with the addition proposed by Mr. Beamish, was put and carried unanimously.

Mr. JAMES LAMBKIN: I do not know whether I am out of course or not, as I have had no communication with any one, but I think, gentlemen, you should, at the present moment, consider the work that your directors have gone through. (Hear, hear.) It was no joke to become a provisional director of this company, and you know that men of large wealth and great influence have refused to become directors. There is no doubt that they had a great deal of up-hill work, and how that work has been done, Mr. Beamish, and especially the report of the directors, have told you. That company that was in embryo, that company that was "a myth—that was not in being at all—that could never succeed"—there it is in a tangible form. (Hear, hear.) Contracts have been advertised for, hundreds have been sent in, and this day the directors come before you, at your first meeting, to show you that your company is a *bonâ fide* one, and that they will light the city on the 1st January, 1858—that they will supply the private consumers then, and that there will be nothing wanting to perfect the lighting of the city in, I may say, ten months. (Hear, hear.) Mr. Lambkin concluded by moving the thanks of the company to the chairman and directors, for their conduct in managing its affairs up to the present moment.

Mr. CHARLES SUGRUE seconded the vote of thanks, which was carried unanimously.

Mr. ANDERSON, the engineer of the company, having read his report, which also appeared in our last, proceeded to say: It is pleasant to meet on this occasion, for I think, if ever an infant company had success in prospect, it is this company. (Hear, hear.) As I said in my report, it is rather unusual, at this stage of proceedings, for a company to attain to such a *bonâ fide* character as you have attained to. (Hear, hear.) I have been connected for the last ten or fifteen years with some very large companies, one of which was formed for the purpose of supplying gas in London. At that time the price of gas there was 6s. per 1000, and though this company proposed to give it for 4s. per 1000, still, I can assure you, it was with the greatest difficulty it managed to get the amount of capital paid up necessary for the requirements of Parliament. This is what the Londoners did, and you, Cork gentlemen, have certainly to congratulate yourselves on the good common-sense and business habits you have shown, and on having come forward in the manly way you did to support a local company, as appears from your share list. (Hear, hear.) Another thing I may state in reference to your prospects. When I came here last year on behalf of the corporation, with regard to the gas question, there was a very prevalent opinion here that a new company could be formed to give gas at 4s. per 1000, because it was sold in London at that price. It became my duty to dispel that notion, for the price of gas depends largely on the amount consumed. However, I said at that time that it was very likely a company could begin with giving gas at 5s. 6d., and when you came to get the whole consumption of the city, that you would then be likely to supply it at 5s.; and then, as the consumption increased, that you might reduce your price to 4s. 9d. or 4s. 6d. per 1000. I am glad I took that position, for events have shown that I was right. You will give gas at a fair mercantile price, which will pay the shareholders, and which they must see is to their own advantage, seeing that if you offered gas at 4s. it is not likely you would have received the great amount of support you have got. (Hear, hear.) When I was here before, I perhaps did not know as much of you as I do now, and in my evidence before Parliament I stated that there should be only one company. Now, as a matter of theory, I hold that opinion still, and I advised at that time, that if you could buy out the other company for a reasonable sum, say £35,000, you should take their works and let them go out of the place. I must say that I have slightly changed my opinion, and I am free to confess that I think that was the utmost amount you could give for the works. I would not now propose such a thing. (Hear, hear.) I believe that £3000 or £4000 could be well taken off, and still leave an ample sum to compensate them for their works, and I state that on this foundation:—In speaking of these matters we should speak comparatively, of course. (Hear, hear.) When first I formed estimates for your works, I did not know you would get a site on which you would get the whole of your building materials, and that you would get iron so cheap—for iron forms three-fourths of your outlay; and we have got tenders at this moment 12 per cent. less than what I said the works would be built for. Seeing that to be the case, and seeing that the ground which you have taken will give nearly all the materials of which the works will be built, and that, consequently, our cost will be very much reduced, it is rather lucky for you than otherwise that the other company have not made you some offer to take their works. (Hear, hear.) Besides, there are other circumstances. Since I was here last year, I became the lessee of the works at Dover*. Now, they were put down in the year 1822, and those in Cork were put down in 1825. Before signing that lease, I made a thorough examination of the works, and I found a great many things there in a very dilapidated state. They had two gasholders, one of which was so bad that I got it stipulated in the lease that we should be allowed to remove it entirely without compensating the company at all, and it was not scheduled to us in the works we got from the company. Gas-works require to have a large amount laid by annually for deterioration, and gas companies who are prudent lay up a large sum out of their earnings for the purpose of replacing those portions of the works that become deteriorated. For instance, take the case alluded to by Mr. Maguire as having occurred in Dover. We found that the gas escaped in two places from the pipe; and on examining the pipe, we found that we could cut it with a saw: you could take a piece of it and write on the wall with it. (Laughter.) The fact is, the iron got volatilized; and on examination we found a large amount of carbon in it, instead of what we had formerly put down as iron. Now, in Chester the people were disgusted with a gas company that existed there about two years ago, and they formed an opposition company. The result of this was that the old company came to them at last, and sold their works. The new company, after having made that arrangement, wished to put their house in order out of doors, and began to lay mains and services; and they thought they would take up the others and sell them, but it would have been far better for them had they simply disconnected those pipes, and allowed them to lie dead in the ground. (Hear, hear.) Now, when we can get iron as cheap as we can, and lay our pipes down in a first-rate manner—and when, very likely, the consumption of gas will increase to a considerable extent, as a matter of consequence—you will have a larger return and greater profits from the same outlay. (Hear, hear.) One thing I have only got to say in relation to shares. The amount of shares required to be taken, as you are aware now, will be considerably reduced; and I would advise you, in my capacity of engineer to the company, that you should arrange to take among yourselves the whole of those shares. (Hear, hear.) I will give you my reason for such advice. When we formed the company in London to which I have referred, I told you we had some difficulties; and how did we get over them? There were certain estimates formed for the formation of the company, and we got a contractor who said, "I will build the whole works for the engineer's estimate;" and the company agreed to pay him that, though it might be done 20 per cent. less, because those estimates were formed for the purpose of meeting an expensive opposition in Parliament. We had to fight all the old companies who were opposing us, and we had to find high estimates for fear there would be any flaw in them, which of course would be taken advantage of by our opponents. This contractor came forward and took the contract at these very high estimates, but as a boon to us he took 15 per cent. in shares. But the shares rose from £10 to £14 each afterwards, so that he got 20 per cent. in the first instance, and he afterwards got £4 over on every share he had taken. I know well you will get contractors to take all the shares you could dispose of. When I was in London many persons asked me as to the state of the company. I told them, and the next proposition was, would it be an inducement to give parties contracts if they were to take shares. It is a common question, because new companies are not often in such a state as you are; but, as I have said, if you keep your shares within your city, I have no hesitation in saying that you will sell them at one or two pounds premium before two years are over. (Applause.)

Messrs. J. F. Maguire, M.P.; John Arnott, T. Mahony, J.P.; Edmund Burke, James Lambkin, Gregory O'Neill, and Alexander M'Ostrich, were then elected directors, which terminated the proceedings.

THE STOCKTON GAS BILL.

MEETING OF THE TOWN COUNCIL, FEBRUARY 27th,

REPORT OF THE GAS COMMITTEE.

The committee appointed at the last quarterly meeting of your body to examine the provisions of "The Stockton Gas Act, 1857," beg leave to report that they met in pursuance of your resolution, and took the provisions of the bill into their consideration, and after hearing the arguments adduced for and against the measure, have come to the resolution that they consider the bill a fair and reasonable measure, but they recommend to its promoters (with a view of preventing misconception in its future stages) that a clause should be introduced limiting the price of gas to private consumers not to exceed 5s. 6d. per 1000 cubic feet, and on this being complied with they beg to report in favour of the bill.—Signed on behalf of the committee,

WM. SKINNER, Chairman.

Alderman SKINNER moved that the bill introduced into Parliament by the Stockton New Gas Company and the Stockton Gas Consumers' Company, authorising the company to sell, and the corporation to purchase the undertaking, and to raise the money, and for other purposes, be approved of, subject to such alterations as may be required by either House of Parliament.

Mr. MAINWARING seconded the motion.

Mr. BYERS could not see the propriety of inserting such a clause as was spoken of, to limit the price of gas to 5s. 6d. per thousand. (Hear.)

Mr. TURNBULL said it was incorrect to say that 10 per cent. had ever been paid by the gas company; but if that had been paid while the price was 4s. 6d. per 1000, there ought not to be a reserve of 5s. 6d. In his opinion 4s. 6d. should be the price fixed in the bill as a maximum. Such clauses were being introduced into other bills now before Parliament. If he could understand the bill, it gave the present company power to take five per cent. and all the profits till the works were sold to the corporation. (No, no.) He was desirous the terms should be carefully examined between the company and the corporation.

The motion was agreed to with three dissentients.

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* The following letter has been addressed to the editor of the *Cork Examiner* in order to correct some of the mis-statements of the speaker with regard to the Dover Gas Works.

Dover, March 11, 1857.

Sir,—My attention has been called to the report in your paper of the 4th of the proceedings at a meeting of the Cork Gas Consumers' Company, held on the 2nd. instant, at which Mr. Anderson is reported to have made assertions totally unfounded in fact, and to have drawn inferences therefrom so prejudicial to the company I have the honour of representing, that I am compelled to request you to give this letter a place in your paper, that the real circumstances may have the same publicity as Mr. Anderson's statements.

Mr. Anderson calls himself "lessee" of the Dover Works; the fact being that he and Mr. R. H. Jones are appointed managers of the company's works for the term of 14 or 21 years. He then goes on to say that, "before signing the lease (which, however is no lease at all), he made a thorough examination of the works;" and as his partner, Mr. Jones, was for several years previously secretary of the company (and though not in name yet virtually manager of the works under the directors), it may safely be assumed they knew pretty well the state of the works, mains, &c.; and I would ask if it is probable a man so "wide awake" as Mr. Anderson is represented to be would have agreed to pay a high annual sum for their use, and entered into covenants to keep them in repair and good working order for a long term as he has done, *if* they had been in the very deteriorated state he represents.

With reference to the first case he quotes, I deny that the managers had permission to remove the gasholder No. 1 on account of its state of repair; on the contrary, the works of the company are very confined for space, and (as the company were constructing a new gasholder alone large enough for the probable consumption of the town for some years) the managers asked and received permission to remove the small gasholder to make room for other purposes, the company being entitled to the materials when removed. And I beg also to state that this gasholder is scheduled in the deed of arrangement between the company and Messrs. Anderson and Jones precisely in the same manner as the other property of the company of which they have the use, the two gasholders being comprised in one joint description.

It is also unfair and incorrect to argue from the state of the pipe alluded to by Mr. Anderson that our mains and pipes are generally in a decayed state. The pipe in question happened to be between the sea and the harbour, and was thus acted upon by the salt water, which alone was the cause of decay; and there is no reason to suppose that the pipes beyond the reach of such influence are otherwise than in good condition; indeed, the leakage of our pipes shows they cannot be in the very deteriorated state Mr. Anderson seeks to prove. Up to 1854 the leakage was under 12 per cent. (which is a very low average); and if, as is probable, it has increased since, it is solely attributable to the operations of the Local Board of Health, who, in laying down their system of drainage and water supply, materially damaged the pipes, and rendered frequent escapes and consequent repairs unavoidable. And it is singular that in the schedules to the deed of arrangement between the company and the managers, out of a list of between 80 and 90 mains described, only two should be described as "in bad," and two in "very bad condition," if Mr. Anderson in his "thorough examination" had found them in so deteriorated a state as he wishes the public to infer they are, since the *list of mains and their condition was furnished by the managers themselves.*

Begging pardon for so long an intrusion on your space,

I am, your obedient servant,

GEO. FIELDING,

Secretary to the Dover Gaslight Company.

Mr. DODDS moved that the report now read, of the committee that had been appointed to consider the Gas Bill, be adopted, with the omission of the clause proposing to limit the maximum charge for gas to 5s. 6d. per 1000 feet.

Mr. MAINWARING seconded the motion.

Mr. TURNBULL would have a maximum price of 4s. 6d. fixed by the bill.

Mr. ROMYN would not have the works purchased but at a valuation.

Mr. TROTTER thought that to name any price as a maximum would be to fetter the corporation. He believed there would be a clause put in the bill to fix the illuminating power; and, if that should be the case, who could say that 4s. 6d. would be a sufficient price? Under such a doubt, it would be unwise to name any maximum price. If the company who had the works to sell to the corporation had paid 10 per cent., it would be a different thing.

Mr. TURNBULL said they had not paid 10 per cent. on the whole of the capital.

Mr. TROTTER continued. He did not wish to offend by naming 10 per cent. He would say 9¾ per cent. instead. (Laughter.) Their bill showed that they had increased the value of the shares from £6. 5s. to £9. 10s., and had lately been dividing 10 per cent.; and when the works were sold, they were as capable of paying 10 per cent. as at any time previously. It had been said that they would have to rate the town to pay the interest on the capital. There was no fear of that; but the committee had recommended the 5s. 6d. clause, he supposed, to prevent such a contingency. If the corporation did not take the works now, they would never have the chance again. They lost the opportunity at the time of the Borough Extension Bill being obtained, and solely on account of the opposition shown by the gas directors; and would they now stultify themselves by rejecting it? He recommended the corporation to take the bill, without fettering it with the maximum clause.

Mr. SETTLE inquired whether the opinion of the town clerk had been taken on the bill?

Alderman SKINNER said the town clerk had been present with the committee, had examined every clause, and agreed to them, and said it was a very fair bill.

Mr. SETTLE went into the merits of several clauses, which he required to have explained.

Mr. ROBINSON said that Mr. Settle seemed to think that the gas company should sell their works to the corporation, and still bear its responsibilities.

Mr. CLEPHAN said, to fix any price as a maximum would be oppressive, in case the pipes should have to be taken a long way, at great expense, as to Norfolk. It would be but fair, under such circumstances, that an extra price should be charged.

Mr. FOSS said they had better have the clause to limit the profit to 10 per cent. (Laughter.)

Alderman WREN regretted that opposition should be given to the bill after so much time and labour had been given to it gratuitously by the gentlemen who had the management of it.

Mr. DODDS could not see the bearing of much that had been said upon the question before them. Mr. Romyn's remarks induced him to reply, that the directors of the gas company, on selling their works, bound themselves to use their endeavours to get a bill to authorise the sale to the corporation; and why did they now show opposition to it? Mr. Romyn had signed an agreement to that effect. Mr. Turnbull, usually careful, had fallen into a great error in saying the present holders were to receive 5 per cent. and all the profits. Such was not the case by the terms of the bill. Mr. Settle could not have read the bill attentively, or he would not have cavilled at clauses 74 and 79, which placed all mortgages, present or future, on the same terms.

The motion was agreed to, with only five against it.

Mr. DODDS moved that the resolution of the 16th of October last, to purchase the works of the Stockton New Gas Company and of the Stockton Gas Consumers' Company, be confirmed, and that an agreement to that effect, between the corporation and the companies, be forthwith prepared and executed.

Mr. BENINGTON seconded the motion.

Mr. TURNBULL observed that none but shareholders had spoken at that meeting. He felt bound, as one of the parties engaged, to carry out the agreement—(hear)—but he felt at liberty to object to any part of the bill, and he had petitioned against some of the clauses. The old company had paid 10 per cent., and was it likely they would take 5 per cent. for their money.

The MAYOR said Mr. Turnbull was going beyond the matter, and was not in order.

Mr. TURNBULL said he intended to tell them what he had to say in an amicable spirit, and if he was put down he should have to fight.

Alderman BYERS hoped that endeavours would be made to avoid opposition in Parliament. The matter had been undertaken simply to benefit the town.

Alderman JACKSON said, the old directors, according to the agreement, had a voice equal to the new directors. The third clause gave them that power.

Mr. DODDS denied that was the case.

Alderman JACKSON said he had taken an extract from the stamped copy.

Mr. DODDS demanded that the stamped copy should be produced, as either the veracity of himself or Alderman Jackson was involved.

The MAYOR requested that it should be sent for, and, on its being produced, Mr. Wilson read the disputed clause, by which Alderman Jackson was shown to be wrong.

Mr. DODDS, with warmth of expression, said it was due to the council that Alderman Jackson should make an apology for attempting to palm upon them a garbled statement to suit a purpose. He was astonished he should use such clap-trap to influence the council. If a director of the old company would do so in the council, it was not to be wondered at that false statements should be circulated upon the public; this was but a sample of what had been done out of doors.

Alderman JACKSON was not aware but the extract he had read was a correct one.

The motion was agreed to.

Alderman SKINNER moved that the corporation seal be affixed to petitions to Parliament in favour of the bill, and when the bill is prepared for committee, to as many copies thereof as may be found necessary.

Mr. ROBINSON seconded the motion, and hoped no opposition would be shown in Parliament. As one of the parties in the present company he could assure them he had no wish to part with the property, and was ready to guarantee six per cent. for seven years, and seven and eight per cent for the succeeding fourteen years as a gas dividend. They had, however, pledged themselves to sell to the corporation, and he would do so honourably.

Alderman WREN could not sit quietly and hear such paltry opposition as had been shown; but it was from a very small minority, it was true, and it was a disgrace to them, when it was evident to every one that the town would have the works, and be greatly benefited by them.

The motion was agreed to with two against it.

Mr. DODDS moved that the Mayor, Alderman Skinner, and Councillor Benington be a committee to assist the promoters in passing the bill through Parliament, with power to affix the corporation seal to documents, and to take such other means as they may think expedient.

Mr. CLOSE seconded the motion. Agreed to.

THE SUNDERLAND GAS BILL.

A public meeting, called by the Mayor, in compliance with a requisition numerously signed by the tradesmen and other inhabitants of the town, was held in the Central Hall, John Street, on the 4th inst., "to consider the Sunderland Gas Bill, now before Parliament, and to adopt such resolutions relative thereto as may appear expedient and necessary to protect the interests of the consumers of gas, and the ratepayers and inhabitants, from injury by the said bill." The attendance was considerable, though it may possibly have been restricted in some degree by the fact of its having become known that subsequently to the calling of the meeting an arrangement of the matters in dispute had been effected between the local bills' committee of the town council and the directors of the gas company. The Mayor occupied the chair, and was accompanied on the platform by Alderman Crozier, Alderman Williams, Mr. Jno. Candlish, and a few others.

The MAYOR, in opening the proceedings, said it had been the intention of the promoters of the meeting to lay before the inhabitants a string of requisitions which the local bills' committee had proposed to the gas company to be inserted in their bill. But since the handbill calling the meeting was issued, a conference had taken place between the directors of the gas company and the local bills' committee, at which an arrangement was effected which, it was hoped, would be satisfactory to the public. His worship concluded by expressing a hope that every one who desired to address the meeting would be patiently heard, and that everything like personality would be avoided by the speakers.

Mr. CANDLISH then rose, and at some length recapitulated the past history of the negotiations with the gas company, more particularly with respect to fixing a maximum for the price of gas under the former bill. Amongst other things, he stated, that at a meeting held in 1853, the directors of the gas company, and especially Mr. E. C. Robson, stated that the company had no intention to raise the price in future beyond the maximum of 3s. per 1000 cubic feet, as then fixed; notwithstanding which the price had been raised to 3s. 9d., whereby the consumers were subjected to an additional cost of £4000 a year for gas. He then came to the present bill, and adverted to the nature of the arrangement which had been effected. By this bill the company asked to perpetuate powers previously obtained, and to obtain other powers which, in the opinion of the consumers, they were not justified in asking. They proposed that under its provisions the capital of the company might be raised from £90,000 to £190,000, and it would be most inexpedient for the interests of the consumers to give them such a power. The directors proposed taking power to raise a contingent fund of 10 per cent. upon the nominal capital of £190,000. But by the arrangement which had been effected the 10 per cent. was to be raised upon the paid-up capital, and this reserved fund was to be reduced to £12,000, so long as the capital did not exceed £120,000. The next material clause was that which gave the company the power of charging 5s. per 1000 cubic feet, being an increase of 1s. 3d. The committee of the corporation thought it unfair and inexpedient that such a maximum should be fixed. His own conviction was that gas could be produced in Sunderland, realising a dividend of 10 per cent., at 3s. per 1000 cubic feet. ("Hear," and applause.) This having been pressed upon the directors, they consented to reduce the maximum to 4s. per 1000 cubic feet, which would make a difference of £5000 a-year in favour of the consumers. Another monstrous feature in the bill was the proposal of the directors that, in addition to the 10 per cent. which they took power to raise, they should have 10 per cent. on every share of the company for every year during which it had been in existence. But without discussion they had consented to expunge that clause from the bill. In conclusion, he contended that there was an absolute justification for the opposition which had been raised to the bill, and which had been the means of securing the public against an unreasonable and exorbitant price. It was for the meeting to say whether they would prosecute the petition against the bill which had been lodged. His own opinion was that the maximum ought to have been 3s. But at the same time he ought to state that a majority of the local bills' committee believed that it was not probable a committee of the House of Commons would consent to its being reduced to that maximum. (Mr. Candlish concluded amidst much applause.)

The MAYOR then said he would state the exact propositions to which the directors of the Gas Company had consented. In the first place, the company had proposed to take greater powers over the streets than ever they had before. They proposed to obtain these powers under the Gas Companies' Clauses Consolidation Act, and the committee of the corporation desired to restrict them to the powers they possessed under their own act; and this they had consented to. Then they had agreed not to interfere with the bridge, in laying their pipes, further than they had power to do at present. The next point was, that they were now bound to raise the reserve fund of 10 per cent. upon their paid-up capital, not upon their nominal capital. Then they had agreed that all advertisements relating to the company should be inserted in the newspapers of the town. By the terms of the bill, as framed by the company, they were required to advertise only in any one newspaper in the county of Durham; but the committee thought this inexpedient, and the result was that all their advertisements would at least come under the eye of the townspeople. They had also consented to have the bill so framed that the company would be under an obligation to light any part of the borough which the corporation thought reasonable, the corporation being willing to pay for the lighting. The committee had also succeeded in getting them to insert a clause in the bill to the effect that they should supply gas to any private consumer, and lay the main up to any boundary. An important clause which the company had put into the bill was, that every consumer of gas should be compelled to burn by meter. If the bill had passed as framed, they (the corporation) would have been compelled to put a meter to every gas-lamp in the town. (Laughter.) This had been altered. These were the principal points in the arrangement which had been effected. (Applause.)

Mr. MASON, of the *Sunderland Times*, said he rose to propose the first resolution as a consumer of gas, not, certainly, the largest consumer in the town, but one of the largest, and he felt the more justified in presenting himself to do so, inasmuch as he had no interest whatever in the company, and was not identified with the corporation. It seemed to him that there was much cause of congratulation in the fact that there was a prospect of putting an end to this contest. The summary which had been given by the Mayor would, he thought, show that the company had met the committee in a liberal and proper manner. ("Hear," and applause.) It should be remembered that had a parliamentary contest been entered on, the cost would have fallen upon the consumers. After alluding to one or two other points connected with

the matter, Mr. Mason read the resolution, which was to the effect—"That this meeting approves of the arrangement made between the Local Bills' Committee of the corporation and the directors of the Sunderland Gas Company, and respectfully requests the Mayor and corporation to see that the alterations, as agreed upon, are carried into effect, on which condition the petition will be withdrawn." In conclusion, Mr. Mason said he did not see much danger in allowing the company to raise the additional capital now provided for in the bill. The gas-works were in a very dilapidated state, and probably they would soon be required to raise new works. He thought they ought not to press hardly upon the company, but do to them as they would be done by. (Applause.)

Mr. Thomas Gibson, fruiterer, seconded the resolution in some desultory observations which excited a good deal of laughter and applause.

Mr. E. C. Robson, in a short speech, denied that he had ever opened his mouth in public on the subject.

Mr. Candlish replied to the remarks made by Mr. Robson, after which

The Mayor called for a show of hands upon the resolution, which was declared to be carried, with only two dissentients.

Alderman Williams next addressed the meeting in explanation of certain points.

One or two other resolutions of a formal nature were proposed and carried, after which the proceedings terminated.

Claim to the Ashes of Gas-Works by a Local Board of Health.—Two informations were laid before the magistrates at the Town Hall, Worthing, on the 25th ulto.; the first under the Public Health Act, and the second under the Local Act, under which the Local Board of Health claimed the right to take away the ashes from the gas-works, and appropriate them to their own use. The first information was laid by Mr. Charles Hide, surveyor to the Local Board of Works, against Mr. Edward John Wells, manager of the gas-works, under the 96th sec. of 10 and 11 Vict., chap. 34, which with other sections of that act is, with the Public Health Act, incorporated with the Town Act. This section imposes a penalty of £5 on any person who refuses to permit the scavengers to remove dirt, ashes, or rubbish (from premises in their occupation described in the previous section as houses and tenements).—Mr. Dennett, for complainant, stated the case, and argued the law applicable thereto fully with great clearness.—Mr. Kennett, for defendant, admitted the refusal to permit the removal of the material called ashes by the Local Board, but urged that such refusal was justified under the 52nd section of the Town Act, which he said must be read with the section under which the information was laid; it was to the following effect:—"Provided always that nothing herein contained shall extend to prevent any person from preserving or keeping for their own use and benefit any ashes, &c., so as not to be laid in prohibited places, or to be a nuisance," which was not shown as alleged. The second information was Same *v.* John May, for receiving and carrying away 1½ chaldron of ashes, from the gas-works, laid under the 53rd sec. of Town Act,—*For receiving and carrying away Ashes*, whereby he had incurred a penalty of 50s. The same advocates appeared. The sale and carrying away were admitted by Mr. Wells, the former defendant, who in a letter admitting these facts, called the material *ashes!* Mr. Kennett here contended that the material was not ashes, but breeze, a deposit made in the manufacturing of gas, and possessing commercial value, and being mixed with tar, and thus converted into asphalte for roads; and that it still retained life and vitality, and could be used for fuel. He called Mr. Wells, who now swore the material was not ashes but breeze, and possessed commercial value, and when mixed with coal was consumable in steam furnaces, and by the poor. Mr. Dennett replied that they were not ashes, and if they were at all they were not vested in the local board, because such only as were produced in houses and not in factories were vested in that board. Both advocates ably argued their respective views.—Decision was deferred, but ultimately the magistrates dismissed both informations.

City of London Gas and Water Supply.—The annual report of Mr. Haywood, engineer and surveyor to the City Commission of Sewers, gives the following information on these topics:—*Public Gas Lamplighting.*—The triennial contracts for lighting the street-lamps expired during the year, and the new contracts were advertised, and the following tenders received upon the 29th of April:—

Gas Company,	Tendered Sum per Annum per Batswing Burner, consuming 5 Cubic Feet of Gas per Hour.	
	For One Year.	Three Years.
	£. s. d.	£. s. d.
City of London	4 10 0	4 6 0
Chartered	4 5 0	4 2 0
Great Central	4 6 0	4 4 0

The tenders accepted were those of the Chartered for the northern and eastern portion of the City, and the Great Central for the south-western portion of the City—the contract being given for three years. These two companies held the previous three years' contract, but at a much lower price; this will be seen by the following table:—

Gas Company.	Contract Price per Annum per Batswing Burner, consuming 5 Cubic Feet per Hour.		
	For 3 Years, ending June 25, 1856.	For 3 Years, ending June 25, 1859.	Percentage of Increase in Price.
	£. s. d.	£. s. d.	
Chartered	2 19 6	4 2 0	37·81
Great Central	3 3 0	4 4 0	33·33

The cost of lighting the public lamps during the ensuing three years as compared with the previous three years will, therefore, be as follows:—

Gas Company.	Present No. of Lamps Lighted.	Price per Burner per Annum.	Total Cost per Annum.
		£. s. d.	£. s. d.
Chartered	1,104	4 2 0	4,326 8 0
Great Central	1,721	4 4 0	7,228 4 0
Total	2,825		
Total cost of lighting per annum, for three years, ending Midsummer, 1859			11,754 12 0
Cost of lighting per annum, for three years, ending Midsummer, 1856			8,705 11 0
Increase per annum			£3,049 1 0

Water Supply.—The water supply within the City remains as before; the New River Company have laid much pipage with the view of increasing the supply, and arranging for the delivery of it upon the constant system; these works have once or twice disturbed the regularity of the supply in some parts of the City, but with these exceptions the supply during the year appears to have been uniformly copious; the published returns of the quantities of water delivered by the different metropolitan companies show that whilst in 1850 the gross yearly supply of the New River Company was 14,200,000 gallons, or about 170 gallons per house per diem, it is now 25,000,000 gallons, or 263 gallons per house per diem; the quality of the water is also much improved, as the whole of it is now filtered before distribution. During the year the New River Company, for the first time, have made charge for the water supplied for public purposes; this is a question of much importance to the commission, involving, as it may do, a disbursement of between £1000 and £2000 per annum. By this demand the question of the propriety of the commission rating the pipage of the company has arisen, and the whole question is now under consideration.

Liability of Local Boards of Health.—The parties concerned in the arbitration case, Chasemore *v.* the Croydon Local Board of Health, met Mr. Creasey, the arbitrator, at the Guildhall Coffee-house, on Monday afternoon, at two o'clock, when an order was made that the local board should thoroughly cleanse the mill-head and stream, and within one month cease and discontinue turning anything into the Wandle. The award of damages to be made next month.—*South Eastern Gazette.*

Price Current.

CASTINGS, per Ton.

Average Weight of Cast-Iron Gas-Pipes, per Yard.

1¼ in.	2 in.	2½ in.	3 in.	4 in.	5 in.	6 in.	7 in.	8 in.	9 in.	10 in.	12 in.
16	21	28	33	51	70	89	107	126	149	177	208 lbs.

Retail Prices are 5 to 10 per cent. higher.	London.	Glasgow	Newcastle.	Wales.	Yorkshire, Derbyshire, and Staffordshire.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Pig Iron, No. 1	4 10 0	3 15 0	3 12 0	4 0 0	4 10 0
1¼ and 2 inches Socket Pipes	8 0 0	7 5 0	7 10 0	7 15 0	7 10 0
2½ and 3 " " "	7 10 0	7 0 0	7 5 0	7 10 0	7 5 0
4 and 5 " " "	7 10 0	6 15 0	7 0 0	7 5 0	7 0 0
6 in. & upwards " "	7 5 0	6 10 0	6 10 0	7 0 0	6 10 0
Retorts, 1st fusion, hot blast	7 0 0	...	7 0 0	7 5 0	7 0 0
" 2nd " cold "	8 0 0	...	7 5 0	7 10 0	7 5 0
Tank Plates, ⅜ thick and above	7 10 0	6 15 0	7 0 0	7 5 0	7 0 0

COALS.

Newcastle.	s. d.		Scotch Cannel.	per ton
Unscreened.			Boghead, at Leith	32s. 0d
Whitwell Primrose, Burnhope	7 0	per ton	Kirkness, best	23 0
Pelton and Medomsley	7 6	"	Capeldrae, 1st quality	20 0
Pelaw	7 9	"	" 2nd "	12 6
Eighton Moor, New Pelton, Peareth, South Pelaw, Washington Hutton, & South Peareth	8 0	"	Lesmahago, at Glasgow	25 0
			" " Leith	27 6
			Arniston	22 0
			Wemyss	20 0
			Knightswood	18 0
Ramsay's Newcastle Cannel	15 0	"	Methill	13 0

SUNDRIES.

Best Newcastle fire-bricks	60s. per 1000	Welch bar iron, in London	£8. 15s. per ton.
" " " clay	12s. per ton.	Foreign spelter	£31 "
Cliff's fire-bricks at Wortley,	57s. 6d. p. 1000	English block tin	£146 "
Tough cake copper	£135 per ton.	Banca " "	£152 "
English pig lead	£24 "	Tarred rope yarn	18s. per cwt.

WROUGHT-IRON TUBING, subject to 35 per cent. Discount.

	2 inches.	1¼ inch.	1½ inch.	1 inch.	¾ inch.	½ inch.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Patent welded tubes, from 2 to 12 feet, per foot	1 8	1 0	0 10	0 7	0 5	0 4½
" " " 6 in. to 18 in., each	3 0	2 0	1 9	1 3	1 0	0 9
Connecting pieces, or long screws	3 6	2 3	2 0	1 6	1 2	0 11
Bends, springs, and elbows—wrought iron	3 9	2 3	1 9	1 0	0 10	0 8
Tees, wrought or cast	4 0	2 6	2 0	1 6	1 1	0 10
Crosses, wrought or cast	4 6	3 0	2 6	2 0	1 6	1 2
Iron cocks	17 6	9 6	7 6	4 6	3 3	2 6
" with brass plug	28 0	16 0	13 0	7 0	5 6	4 6
Diminishing sockets, caps, plugs, and nipples	1 3	0 9	0 8	0 6	0 5	0 4
Plain Sockets	1 0	0 8	0 7	0 5	0 4	0 3
Syphons, 2 quart	15 0	14 0	13 6	13 0	12 0	

FREIGHTS, per Ton.

Coastwise—Newcastle.		*Foreign.*	
Chatham & Roches-	6s. 0d	Boulogne	8s. 3d
Cork [ter	10 6	Barcelona	28 0
Dover	6 6	Bordeaux	16 6
Dublin	12 0	Cadiz	16 0
Exeter Quay	8 6	Calais	8 3
Folkestone	6 9	Dieppe	9 6
Hastings	8 6	Genoa	29 6
London [mouth	5 9	Hamburg	9 0
Lowestoft & Yar-	4 9	Havre	9 6
Lynn	5 0	Leghorn	29 6
Portsmouth	8 0	Lisbon	16 0
Plymouth	8 6	Rotterdam	8 0
Whitstable	7 6	Stettin	11 6
Weymouth	8 6	Trieste & Venice	32 0

MR. JONES begs to intimate to the Directors and Shareholders of Gas Companies, that he can be consulted on the most efficient modes of keeping the accounts of Gas Companies, whereby their accuracy may readily be proved; and that he is also open to be engaged as a Professional Auditor.

ANDERSON and JONES, Lessees of Gas-works, DOVER.

GAS ENGINEERING OFFICES,

104, LEADENHALL STREET, LONDON.

I beg to inform my business friends that I have removed my offices to the above address, where I shall be happy to see them on all matters connected with the profession.

Thanking many gentlemen for their use and recommendation of my Exhausters, Valves, &c.,

I am, &c. GEORGE ANDERSON.

SECOND-HAND PURIFIERS.

WANTED, a Set of Dry-Lime Purifiers, each containing a surface of about 120 square feet.

Full particulars, with lowest price, may be addressed to S. R., care of Mr. W. KING, 11, Bolt Court, Fleet Street, LONDON (E. C.).

J. W. & J. CHANDLER,

LATE

BEVERIDGE, HEDLEY, & CHANDLER,

ENGINEERS, MILLWRIGHTS,

IRON AND BRASS FOUNDERS, &c.,

MANUFACTURERS OF ALL DESCRIPTIONS OF GAS AND WATER-WORKS' APPARATUS, AND PIPE-TESTING MACHINES,

NELSON FOUNDRY,

PRESTON.

N.B.—A stock of Pipes always on hand, from 1½ inch and upwards.

NEW PATENT WET GAS-METER.

KNIGHT, MERRY, & EXLEY,

GAS-METER MANUFACTURERS,

14, BARGE YARD CHAMBERS, BUCKLERSBURY,

LONDON,

AND 131, BRADFORD STREET, BIRMINGHAM,

beg to submit to Gas Companies and others some of the advantages possessed by their

PATENT ANTI-CORROSIVE ECCENTRIC GAS METER

over those of the ordinary kind.

The Case is formed of strong Sheet Iron of the best quality by powerful machinery; and, when complete, consists of

FIVE PIECES ONLY,

(the ordinary case contains Twenty-five pieces), which is thickly coated, with a Metallic Alloy, similar to that of the Drum, which renders it as durable as the Drum itself.

The SYPHON, or Spout, is cast in one body, without seam, and is double the thickness of those usually employed.

The parts that communicate Motion to the Index are INDESTRUCTIBLE, and will continue in good working order for an indefinite period.

The FLOAT is cylindrical, and not liable to collapse.

The VALVE is self-adjusting, ensuring soundness and facility of action under all pressures.

The INDEX is thoroughly protected from water rising in the Spindle Tube, should the pressure exceed six inches.

The FILLING and WATER-LEVEL APPARATUS are on the Syphon principle, which prevents the abstraction of Water from the Meter by pressure.

These, with other minor improvements, make this Meter superior in every respect to those generally made.

The Patentees respectfully solicit a trial, feeling confident that its advantages only require to be known to ensure its general adoption. The original principle, so long tried and proved to be correct, has not been departed from in the arrangement of the PATENT METER—the aim of the Patentees having been to perfect what has been already well tested, rather than risk any novel combination or untried invention.

Knight, Merry, and Exley also manufacture the ordinary Wet Gas-Meter, Street Lamps, &c. &c.

Further particulars and Price Lists may be obtained at either of the above addresses.

TO GAS COMPANIES, ENGINEERS, AND MERCHANTS.

EDWIN DIXON,

WROUGHT-IRON TUBE WORKS,

WOLVERHAMPTON,

begs with the utmost confidence to solicit the order of Gas Companies, and persons using or selling Gas Tubes. Having for a long period supplied the largest Gas Companies and Consumers in the United Kingdom and the Continent with unvarying approbation, and almost exclusively the Local Boards of Health under Government Engineers, with Galvanised Iron Tubes and Connections, it has become an inducement to make such facts known.

Large Stock always being on hand, orders of any magnitude, from 10 to 100,000 feet, are executed promptly, and carefully tested by powerful hydraulic pressure before leaving the Works.

Boiler Tubes, Core Bars, Hollow Spindles, and Hydraulic Press Pipes, to resist 5000 lb. to the square inch, made on the shortest notice.

N.B.—Mr. Edwin Dixon had the honour of receiving the only Prize Medal of the Great English Exhibition, 1851, awarded to this manufacture.

J. CLIFF'S

FIRE BRICKS, GAS RETORTS, &c.

Orders for London and South of England to be addressed to Mr. NEWTON, Agent for the District, Park House, Thornhill Road, ISLINGTON (N.).

N.B.—A few Retorts of each size, and a large stock of Bricks and Lumps, always on hand at the above Wharf.

SECOND-HAND STATION-METERS.

CHARLES BOTTEN and SON, having lately exchanged some STATION-METERS (in good condition) for larger ones, will dispose of them on most reasonable terms. C. B. and SON would also call the attention of all buyers to their new tariff for Consumers' Meters. CHARLES BOTTEN and SON, Engineers and Manufacturers of Gas Meters, Fittings, and all Gas Apparatus, Crawford Passage, Ray Street, Clerkenwell, LONDON.

HARRIS AND PEARSON,

PROPRIETORS OF

BEST CLASS-HOUSE POT AND CRUCIBLE CLAY

MANUFACTURERS OF

FIRE BRICKS GAS RETORTS, &C.

AMBLECOTE FIRE CLAY AND BRICK WORKS,

STOURBRIDGE.

Late in the occupation of I. and W. King. Originally J. Pidcock, Esq.

THE CHEAPEST MANUFACTORY IN THE TRADE FOR

CHANDELIERS and BRACKETS

IN GLASS, ORMOLU, & BRONZE.

OUTSIDE SHOP LANTERNS,

Lined with Patent Silvered Glass.

Wrought Iron, Composition, and Tin Tube,

WITH EVERY DESCRIPTION OF

GAS FITTINGS,

ALWAYS IN STOCK.

CHANDELIERS and FITTINGS

made to Order on the Shortest Notice.

JET MOONS, GLOBES, SAUCERS, & CHIMNEYS,

IN EVERY VARIETY, WHOLESALE AND FOR EXPORTATION.

HODGE and ROBERTS,

101, HATTON GARDEN, LONDON.

Pattern Books of Chandeliers, and also of all kinds of Gas Glasses, sent to any part of the Kingdom on application.

BRYAN DONKIN and CO.'s improved GAS VALVES have been adopted by numerous Gas Companies in England and abroad, and their advantages and great security fully proved. Very large numbers are in use. Prices from 11s. 6d. to 13s. 6d. per inch diameter.

BRYAN DONKIN and Co.,

Engineers, near Grange Road, BERMONDSEY.

RETORT AND BOILER SETTING.

FREDERICK SIMMONDS, Sen.,

No. 19, YORK STREET NORTH, HACKNEY ROAD.

Thirty years RETORT SETTER to some of the leading London and Provincial Gas Companies, to whom he can refer, begs leave to draw attention to his economical mode of Setting Clay or Iron Retorts, &c.

F. S. will engage to provide all materials and labour, or labour only.

TO GAS COMPANIES, FITTERS, AND IRONMONGERS.

LLOYD and SUMMERFIELD, Manufacturers of CUT and FLINT GLASS Jet Moons, Globes, Hemispheres, and Chimneys of every description; Hall Lamps, Lustres, and Chandeliers of the most modern patterns.

PARK GLASS WORKS, BIRMINGHAM.

EDWARD RUSSELL,

ALMA TUBE WORKS,

WALSALL,

Manufacturer of Patent Welded Wrought-Iron Tube for Gas, Steam, and Water. Wrought and Cast Iron Fittings of every description. Stocks, Taps, and Dies. Core Bars for Ironfounders.

JAMES NEWTON,

FIRE-BRICK AND TILE MERCHANT,

Wholesale and for Exportation,

FALCON DOCK, 78 AND 79, BANKSIDE,

SOUTHWARK, LONDON.

DEPÔT for STOURBRIDGE AND NEWCASTLE FIRE-BRICKS, LUMPS, TILES, and CLAY, and every Article suitable for

GAS AND WATER WORKS.

S. & E. RANSOME & CO.,

31, ESSEX STREET, STRAND, LONDON (W.C.),

beg to call attention to their

GAS HEATING & COOKING STOVES.

Price, from 18s. 6d. each, and upwards.

WHOLESALE AGENTS FOR

MEAD'S PATENT DRY GAS-REGULATORS, GODDARD'S DUPLEX & ECONOMIC BURNERS, GAS BATHS, HEATING COILS, TORCHES, &c.

Also,

GWYNNE'S STEAM-PRESSURE GAUGES, and JOHNSTON'S PATENT ALARM WHISTLES, for preventing Explosions in Steam-Boilers.

Drawings and Prices sent on application.

HYDE GAS-WORKS.

TO be Sold by Auction, by Mr. Chas' WORTHINGTON, of Hyde, at the Hyde Gas-Works, Cheshire, on the 23rd day of March, 1857, the following Plant, belonging to Mr. Isaac Booth and others:—

One GASHOLDER, 40 feet by 15 feet, with Pillars, Pullies, Chains, Balance-Weights, &c., complete.

One GASHOLDER, 14 feet by 7 feet, with Pillars, Pullies, Chains, Balance-Weights, &c., complete.

One CONDENSER, 14 feet 10 inches long, by 13 inches square.

One CONDENSER, 15 feet long by 16 inches diameter, with Pipes, &c., complete.

Four Circular PURIFIERS, 7 feet diameter, 3 feet 7 inches deep, with four Valves, Pipes, Crane, Pullies, &c., complete.

Also, entirely New, 46 12-inch PIPES, 28 9-inch Pipes, and 6 8-inch Pipes, Turned and Bored Joints (Richard Barrow, Staveley, maker); with a quantity of Iron Retorts, Mouthpieces, Ascension Pipes, Breeches, Pipes, &c.

Further information may be had of Mr. LEATHER, Engineer, Gas-Works, HYDE.

Sale to commence at eleven o'clock.

WM. SMITH, Secretary.

WESTERN GASLIGHT COMPANY

(LIMITED).

NOTICE is hereby given, that a SPECIAL COURT of the PROPRIETORS of the WESTERN GASLIGHT COMPANY (LIMITED), will be held at the Company's Offices, No. 28, Argyll Street, Regent Street, London, on THURSDAY, the 26th day of March inst., at One o'clock precisely, for the purpose of declaring a Dividend out of the profits for the Half Year ended the 31st day of December last.

Notice is hereby also given, that the Transfer Books will be closed on the 19th inst., and will not be re-opened until after the Meeting.

By order of the Board of Directors,

S. BARBER, Secretary.

London, March 10, 1857.

SOUTH METROPOLITAN GAS-LIGHT AND COKE COMPANY.

NOTICE is hereby given, that an ORDINARY MEETING of the PROPRIETORS of this Company will be held at the London Tavern, on WEDNESDAY, the 8th day of April next, at Two o'clock precisely, to receive the Directors' Report and the Accounts of the Company for the Half Year ended the 31st of December last; to declare a Dividend for the same period; and to elect one Director and one Auditor, in the place of Thomas Bridge Simpson, Esq., Director, and Benjamin Edgington, Esq., Auditor, who retire from office agreeable to the Act of Incorporation, but, being eligible, offer themselves for re-election.

Any Proprietor intending to become a Candidate for either of these offices, must give notice in writing at the Office of the Company, at least 14 days previously to the day of election.

By order of the Directors,

THOMAS LIVESEY, Secretary.

Gas-Works, Old Kent Road, March 17, 1857.

PATENT FIRE-CLAY RETORTS.— O. BROTHERS and COMPANY, Manufacturers of O. Brothers's Patent, beg to state that these Retorts, being made in one entire operation, and in one piece, of any required shape, length, breadth, and height, are not liable to cracks and fissures, of which there is a just and general complaint; and consequently superior to, and cheaper than, any hitherto manufactured.

GREAT REDUCTION IN PRICES—30 per cent. cheaper than any other Clay Retorts manufactured.

Shape.	Sizes.	Length.	Thickness.	Price at Railway Station, Blackburn.	Price per foot run, of any required length, at Blackburn.
		feet.	in.	£ s. d.	s. d.
Dee	12 in. by 12 in.	8	2½	2 0 0	5 0
,,	14 in. by 12 in.	8	2½	2 4 0	5 6
,,	16 in. by 13 in.	8	2½	2 10 0	6 3
,,	18 in. by 14 in.	8	2½	2 16 0	7 0
,,	19 in. by 13 in.	8	2½	2 16 0	7 0
,,	20 in. by 14 in.	9	3½	3 7 6	7 6
,,	24 in. by 15 in.	8	2½	3 12 0	9 0
Round	15 in. by 15 in.	8	2½	2 10 0	6 3
,,	15 in. by 15 in.	10	2½	3 2 6	6 3
,,	18 in. by 18 in.	8	2½	3 0 0	7 6
Oval Retort	18 in. by 12 in.	8	2½	3 0 0	7 6

All other sizes and shapes in proportion, to order.

References and further particulars may be obtained on application to the Patentee, Gas Works, BLACKBURN.

PADDON AND FORD,

PATENT GAS METER & APPARATUS WORKS,
GRAY'S-INN-ROAD, LONDON,
Manufacturers of WET and DRY GAS METERS, STATION METERS, GOVERNORS, EXPERIMENTAL APPARATUS, GAS STOVES, and LANTERNS.

Contractors for the erection or alteration of Gas Works; and every description of Apparatus required in Gas Works supplied.

M. SHEEN, Gas and Railway

Lantern Maker, 90½, Holborn Hill, begs to inform Managers of Gas-Works, &c., that she continues to contract and supply Lanterns on reasonable terms, and keep them in repair by the year.

ADDISON POTTER,

WILLINGTON QUAY,
NEAR NEWCASTLE-UPON-TYNE,
Manufacturer of Clay Retorts, Fire Bricks, and every description of Fire Clay Goods.

WHITEHOUSE and CO.,

GLOBE PATENT TUBE WORKS,
WEDNESBURY,

Beg to draw the attention of Engineers and Managers of Gas Works to the superior quality of the Article they manufacture, both in respect of the iron employed, and the perfect manner in which it is welded; in proof of which they can refer to the testimonials of the most eminent Gas Engineers, and the experience of the principal of the large Gas Companies of the kingdom.
Orders promptly executed.

ALFRED PENNY,

ENGINEER,
WENLOCK IRON WORKS,
WHARF ROAD, CITY ROAD, LONDON.

Mr. PENNY begs to inform Gas and Water Companies that he undertakes the erection of new, or the alteration of existing, works; and that he may be consulted generally on all matters connected with gas and water supply. He is also prepared to supply best Cold-blast Retorts, Socket-Pipes, and Connections, Iron Borings, &c. &c., and all the necessary Castings used in Gas and Water-Works.
*** Country orders executed with care and despatch.

EIGHTON MOOR GAS COALS.—

Parties wishing to be supplied with these first-class Gas Coals will please to apply to Mr. MATTHEW NESBIT, EIGHTON MOOR OFFICE, NEWCASTLE-UPON-TYNE. These coals are well known as among the richest in gas, and working the roundest on the River Tyne. They are extensively used by metropolitan gas works.

FIRST PRIZE IN THE PARIS EXHIBITION.

GAS EXPLOSIONS PREVENTED

by using the Tubes and Fittings Manufactured by
JOHN RUSSELL and CO.,
whose Goods are all well Tested and Warranted.
Inventors and first manufacturers of Lap-welded Flues for Locomotive and Marine Boilers.
John Russell and Co. are the Original Manufacturers, and at present the Holders, of the Patent for Tubes.
WAREHOUSES,
69, UPPER THAMES STREET, LONDON.
MANUFACTORY,
THE OLD TUBE WORKS, CHURCH HILL,
WEDNESBURY, STAFFORDSHIRE.

PATENT FLEXIBLE GAS TUBING.

JAMES LYNE HANCOCK'S

Vulcanized Indiarubber Hose Pipes and Tubing. Manufactory (and Warehouse), Goswell-mews, Goswell-road, London.

Gas Companies, Engineers, Gas Fitters, and the Trade generally, are respectfully informed this Tubing is now manufactured to any size, from ¼ inch bore and upwards, in 100-feet lengths, and perfectly cylindrical, either with or without a spiral wire inside.

VULCANIZED GLAZED FLEXIBLE TUBING, from ¼ inch up to 1 inch diameter, made in 24-feet lengths; or, covered with silk or worsted, up to 100 feet.

VULCANIZED HOSE, for FIRE ENGINES, BREWERS' USE, and for standing great pressures, (Rubber and Cloth combined), made to any length or size to fit the necessary screws, &c.

VULCANIZED INDIARUBBER AIR-TIGHT BAGS, made any size, for Gas Mains, with flexible tubes attached, and fitted with stopcocks complete.

WALTER MABON, Engineer,

ARDWICK IRON WORKS, FAIRFIELD STREET,
MANCHESTER,
Manufacturer of

IRON TANKS for Gasholders, Railway Stations, &c.

GASHOLDERS.—Extensive premises at Gorton, solely for the manufacture of Gasholders, and other heavy Wrought-Iron Structures.

GAS APPARATUS.—W. M. has an extensive assortment of patterns for Purifiers from 4 feet to 15 feet square, also round ones from 4 feet to 10 feet diameter; Scrubbers, Condensers, Washers, Columns, Girders, and Tripod Patterns, suitable for Gasholders, from 10 feet to 150 feet diameter, either Single-lift or Telescope. Contractor for Gas Works of any Magnitude. Designs, Specifications, and Estimates furnished.

WROUGHT and CAST IRON ROOFS for Railway Stations, Gas Works, Warehouses, and Sheds, prepared for Slates or for Corrugated Iron.

IRON HOUSES, either for Dwellings, Manufactories, or Public Buildings.

PIPES and VALVES, for Gas and Water, from 2 inches to 48 inches bore.

WILLIAM PARKINSON AND CO.,

(Successors to the late Samuel Crosley),

COTTAGE LANE, CITY ROAD, LONDON,

Beg to announce that, in addition to the manufacture of GAS-METERS, they continue the manufacture of METERS for MEASURING WATER, SPIRITS, &c., commenced, under Patent in 1849, by the late Mr. William Parkinson.

These Meters are as simple and durable as the Gas-Meter, and as correct as that instrument in the registration of the fluids passing through them.

By Her Majesty's Royal Letters Patent.

JOSEPH BOULTON,

PATENT DRY GAS-METER MANUFACTURER, and also Maker of his Improved WATER METERS.

No. 28, BAGNIGGE-WELLS-ROAD, CLERKENWELL, adjoining the Police Office.—Late of No. 1, Coppice-row, LONDON.

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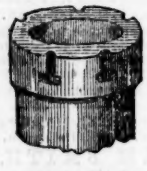

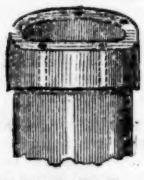

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